



State of New Jersey  
Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation

CN 413  
Trenton, NJ 08625-0413  
Tel. # 609-984-2902  
Fax. # 609-633-2360

Scott A. Weiner  
Commissioner

Anthony J. Farro  
Director

Mr. Andrew Park  
United States Environmental Protection Agency  
Region II  
New Jersey Facilities Section  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278

PC-92-  
FEB 25 1992

Re: NJPDES-DGW RFI Permit for Lenox China Facility, Galloway Township, Pomona, New Jersey.

Dear Mr. Park:

As you requested, those sections of the Lenox China permit that were substantially revised after your receipt of the initial draft permit is submitted for your review. Specific changes within each section have been marked with an "\*" sign. Also enclosed is a copy of the public notice that will appear in the local newspaper.

If you have any questions, please contact Daryl Clark at (609) 292-8427.

Sincerely,

*Marc Romanell*

Marc Romanell, Supervising Geologist  
Bureau of Ground Water Pollution  
Abatement

Enclosures  
GWQM378

c: Tracy Wagner, BGWPA, DPFSR



PUBLIC NOTICE AND STATEMENT OF BASIS  
OF INTENT TO ISSUE A MAJOR MODIFICATION TO AN EXISTING  
NJPDES/GROUND WATER MONITORING PERMIT  
ISSUED UNDER THE NEW JERSEY WATER POLLUTION CONTROL ACT AND THE  
NEW JERSEY SOLID WASTE MANAGEMENT ACT AND THE RULES PROMULGATED  
PURSUANT THERETO AND  
NOTICE OF USEPA'S INTENT TO ISSUE A  
HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984 (HSWA) PERMIT

PROCESSING OFFICE

New Jersey Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation  
Ground Water Quality Management Element  
CN-029  
Trenton, New Jersey 08625  
(609) 292-8427

United States Environmental Protection Agency  
Region II  
26 Federal Plaza  
New York, New York 10278  
(212) 264-9539

AIR AND WASTE MANAGEMENT DIVISION  
HAZARDOUS WASTE FACILITIES BRANCH

NAME AND ADDRESS OF APPLICANT

Lenox Inc.  
100 Lenox Drive  
Lawrenceville, New Jersey 08648

NAME AND LOCATION OF FACILITY

Lenox China, a division of Lenox Incorporated  
Tilton Road  
Pomona, New Jersey 08240  
Atlantic County

NJPDES NUMBER: NJ0070343  
EPA I.D. NUMBER: NJD002325074

DESCRIPTION OF FACILITY

Lenox China, a division of Lenox Incorporated, is located in a rural area on the outskirts of the Town of Pomona in southeastern New Jersey. The facility had manufactured ceramic dinnerware and giftware, but now manufactures only dinnerware.

The manufacturing process includes the progressive dewatering of clay solution (slip) to form the shape of the ceramic pieces. The pieces are then kiln fired, coated with a leaded glaze mixture, and then refired. Process wastes include waste solvent sludge, which is drummed and disposed of off site, clay solution waste (slip) and glaze waste (fritted lead compounds).

#### DESCRIPTION OF PERMITS

The New Jersey Department of Environmental Protection and Energy (NJDEPE) intends to issue a New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) Permit for the purpose of:

- a. Monitoring ground water quality at the site.
- b. Regulating operation of the two infiltration/percolation lagoons known as the Polishing Basin and Tilton Road Pond.
- c. Investigating waste management areas at the facility and determining the nature and extent of contamination that may been caused by any past or current discharges.
- d. Developing and implementing any necessary interim remedial measures at any time during the investigation.
- e. Determining and evaluating the nature, source and extent of trichloroethylene (TCE) contamination at the site.
- f. Developing and implementing the necessary corrective measures to remediate TCE contamination.
- g. Implementing post-closure of the RCRA regulated surface impoundments known as the slip basin and the glaze basin.

This notice is being given to inform the public that the NJDEPE has prepared a draft NJPDES permit that is in accordance with the provisions of the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and its implementing regulations (N.J.A.C. 7:14A-1 et seq.).

This NJPDES permit is intended to be consistent with any HSWA permit for this facility issued or to be issued by USEPA. To the extent that this permit is inconsistent with any such HSWA permit, it is the intent of the NJDEPE to interpret or modify this permit to make it consistent with any such HSWA permit. However, this permit may contain certain additional requirements not included in the HSWA permit, such as long term ground water or discharge monitoring.

Lenox China is an existing facility and implementation of the NJPDES requirements are the enforcement mechanism by which

existing pollutant discharges are brought into conformance and compliance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharge of pollutants and protect the public health and the environment.

This public notice is also being given to inform the public that the United States Environmental Protection Agency has prepared a draft HAZARDOUS AND SOLID WASTE AMENDMENTS (HSA) PERMIT in accordance with the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSA) of 1984 (42 U.S.C. SS6901 et seq.)

The HSA permit requires the permittee to:

- a. Determine the nature, extent, direction and rate of migration of hazardous waste, including hazardous constituents, in soils, ground water, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
- b. Certify annually that the generation of hazardous waste is minimized to the extent practicable, and submit and implement a hazardous waste reduction plan;
- c. Comply with land disposal restrictions;
- d. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSA regulations promulgated on July 21, 1990; ~~and~~
- e. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSA.

#### DESCRIPTION OF DISCHARGE

A documented release of trichloroethylene (TCE) to the ground water has occurred. Investigations conducted by Lenox indicate there are two sources of this contamination. The two sources are a suspected antecedent drum storage pad and degreaser sump. As part of the corrective measures implementation, this permit authorizes a discharge of treated ground water back to the ground via injection trenches.

Twelve (12) Solid Waste Management Units (SWMUs) and one (1) Area of Concern (AOC), have been identified at the Lenox China facility. (Another AOC, an area of stressed vegetation, has since been eliminated as an AOC.) → What is the rationale?

- e. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and



RECEIVING WATERS

The ground waters of the State. The actual and potential discharges are to the Miocene Age Cohansey Sand which is underlain by the Kirkwood Formation.

PUBLIC COMMENT PROCEDURES

The 45 day mandatory public comment period shall begin with the publication of this notice. All interested persons may submit written comments on the draft NJPDES-DGW permit to:

Assistant Director  
Ground Water Quality Management Element  
New Jersey Department of Environmental Protection and Energy  
CN-029  
Trenton, New Jersey 08625

All written comments on the draft HSWA permit should be submitted to:

U.S. Environmental Protection Agency, Region II  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278

All comments shall be submitted within 45 days of the date of this public notice. All persons, including applicants, who believe that any condition of the permits is inappropriate or that the NJDEPE's and EPA's tentative decision to issue these permits as final agency actions is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEPE and EPA with respect to the requirements being applied to this facility. After the close of the public comment period, the NJDEPE and EPA will make a final decision. The NJDEPE and EPA will respond to all significant and timely comments when a final decision is made. The owner or operator and each person who has submitted written comments will receive notice of NJDEPE's and EPA's final decision.

Any interested person may request in writing that NJDEPE and the EPA hold a nonadversarial public hearing on the draft document. This request shall state the nature of the proposed issues to be raised in the hearing and shall be submitted within 45 days of the date of this public notice to NJDEPE, Assistant Director, Ground Water Quality Management Element, and the USEPA, Air and Waste Management Division, Hazardous Waste Facilities Branch at

the addresses cited above. A public hearing will be conducted whenever the NJDEPE and EPA determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

After the close of the comment period, the NJDEPE and the EPA will review and consider all comments received, together with a consideration of the requirements of N.J.A.C. 7:26-1 et seq, N.J.A.C. 7:14A-1 et seq and HSWA. The NJDEPE and EPA will make final permit decisions and, if they are substantially unchanged from the proposed decision, will notify all persons who submitted comments or requested notification. If the final permit decision is substantially changed from the proposed decision, the NJDEPE and EPA will issue a public notice of the decision.

All persons are advised that they must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the comment period. In any review of the final permit decision, no issues may be raised that were not submitted to the administrative record unless good cause is shown for the failure to do so.

Copies of this document have been sent to the Mayor, Municipal Clerk, Planning Board, Sewerage Authority, Health Officer, and the Environmental Commission of Galloway Township. Please bring this notice to the attention of all persons who would be interested in this matter.

#### ADMINISTRATIVE RECORD

This public notice is based on the administrative record which is on file at the offices of the NJDEPE, Division of Publicly Funded Site Remediation located at 401 East State Street, City of Trenton, Mercer County, New Jersey. The administrative record for the HSWA permit is on file at the offices of the Permits Administrative Branch, USEPA-Region II, 26 Federal Plaza, New York, New York. The draft permits and all data submitted by the applicant is available as part of the administrative record. The administrative record maintained at NJDEPE and the EPA is available for inspection, by appointment, between 8:30 A.M. and 4:00 P.M., Monday through Friday. Appointments may be scheduled by calling the NJDEPE at (609) 292-0400 and the EPA at (212) 264-~~9539~~. 8684.

Arnold Schiffman, Assistant Director  
Ground Water Quality Management

11) Slip Basin

This RCRA regulated hazardous waste lagoon was closed in September 1990. This lagoon was used to store clay waste material from 1954 to 1970 and process wastewater containing clay, lead carbonate, frit (low solubility lead compounds in glass form) and silica from 1970 to 1981. From 1981 to 1987, the lagoon received small amounts of process wastewater and was used for surge capacity for the wastewater treatment plant. The total volume of the lagoon was 7,100 cubic yards. The slip basin was closed by raising the waste material above the seasonal high water table, stabilizing the waste material in situ and capping.

12) Drum Storage Area

This RCRA regulated unit consists of an impermeable concrete and asphalt paved area designed to store 30 gallon drums of TCE waste sludge. The storage area drains to a sump pit that is designed to collect spilled material and pump it back into containers. The Drum Storage Area underwent RCRA closure in 1990 and now only stores hazardous waste for less than ninety (90) days. This area is also the site of a previous TCE drum storage area. The previous drum storage area is suspected of being the source of one of the TCE plumes at the Lenox China site.

Area Of Concern (AOC)

\*

1) Area Between Monitoring Well #10 and Aloe Street

This area was not identified in the RFA. Drilling operations at this location revealed the presence of discolored surficial soils. Subsequent investigations conducted by Lenox found that slip waste had been deposited in this area.

DESCRIPTION OF PERMIT

The New Jersey Department of Environmental Protection and Energy (NJDEPE) intends to issue a New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) Permit for the purpose of:

- Monitoring ground water quality at the facility.
- Regulating operation of the two infiltration/percolation lagoons known as the polishing basin and Tilton Road Pond.
- Investigating waste management areas at the facility and determining the nature and extent of contamination caused by any past or current discharges.
- Developing and implementing any necessary interim remedial measures at any time during the investigation.

- Determining and evaluating the nature, source and extent of trichloroethylene (TCE) contamination at the site.
- Developing and implementing the necessary corrective measures to remediate the TCE contamination.
- Implementing post-closure of the RCRA regulated surface impoundments known as the slip basin and the glaze basin.

\*This NJPDES permit is intended to be consistent with any HSWA permit issued or to be issued by USEPA for this facility. To the extent that any aspect of this permit is or may be inconsistent with such HSWA permit, this permit shall be interpreted or modified so as to make it consistent with such HSWA permit. The permittee may request and the NJDEPE shall agree to modify this permit to make it consistent with such HSWA permit. However, this permit may contain additional requirements not included in the HSWA permit such as long term ground water or discharge monitoring.

Lenox China is an existing facility and implementation of the NJPDES requirements are the enforcement mechanism by which existing pollutant discharges are brought into conformance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharges of pollutants and protect the public health and the environment.

#### PERMIT CONDITIONS

The NJPDES-DGW permit has requirements listed in the attached sections regarding General Conditions, Interim Remedial Measures, RCRA Facility Investigation, Detection and Effluent Monitoring Programs, Corrective Measures Study, Corrective Measure Implementation and Post Closure Requirements.

**RCRA FACILITY INVESTIGATION**

Pursuant to the intent and specific requirements of the New Jersey Pollutant Discharge Elimination System (NJPDDES) regulations N.J.A.C. 7:14A-1.1 et seq. [see 1.1, 1.2, 1.7, 2.1(f), 6.1(a)1-3, 5, 6, (b), and 6.15(d)2], the RCRA Facility Investigation (RFI) must be designed to: characterize the facility; define the sources of contamination; define the degree and extent of contamination; and, identify actual or potential receptors of pollutants at, emanating from, or that have emanated from the facility. Also, the RFI shall result in data of adequate technical quality to support the development and evaluation of the corrective measures alternative(s) during the Corrective Measures Study (CMS) and a Detection Monitoring Program. It is the intent of the Department that this permit be consistent with any federal or state-issued HSWA permit, and this permit is to be interpreted or modified as may be necessary to assure consistency between this permit and any such HSWA permit.

Based on the approved RFI Report, data, information, and recommendations, the Department will determine whether a Corrective Measures Study must be performed to develop and evaluate remedial alternatives for all impacted media. In addition, the RFI Report must recommend which Solid Waste Management Units (SWMUs) or other Areas of Concern (AOC) should be included in the Detection Monitoring Program, or if any Interim Remedial Measures (IRMs) are needed to mitigate any environmental problems that pose an imminent danger to human health or the environment.

The area(s) that should be included in an Interim Remedial Measure, a Corrective Measures Study, and/or a Detection Monitoring Program shall be included in the Department's letter approving the RFI Report. In addition, the Department will issue preliminary clean-up criteria for development of a CMS for each impacted medium as part of this notification. The Department shall develop the preliminary clean-up criteria based on N.J.A.C. 7:14A-6.15, N.J.A.C. 7:9-5 and 6, N.J.A.C. 7:26-1 et seq., available Departmental guidance, and applicable Federal regulations.

- \* Lenox China has already partially completed its RFI and should reference all previously completed reports or work plans in the appropriate documents discussed below and/or in Appendix B or C. Any reports or submissions required herein that the permittee had previously submitted prior to the effective date of this permit need not be submitted again. However, addendums or modifications to such reports could be required if needed to meet permit requirements.

## I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- \* A. Within 90 calendar days after the effective date of this permit, the Permittee shall submit to the Department a Facility Background Report in accordance with the requirements set forth in Appendix B.II, attached hereto and made a part hereof. The Department shall review the Report for accuracy and completeness as specified in Appendix B and specific requirements, below, and shall notify the Permittee in writing of any deficiencies or if any additional information is required. The Permittee shall revise the Report to conform to the Department's comments within 60 calendar days of receipt of said comments, and resubmit the report to the Department.
- \* B. Within 150 calendar days after the effective date of this permit, the Permittee shall submit to the Department a detailed Draft RCRA Facility Investigation Work Plan, (hereinafter the "RFI Work Plan") in accordance with Section III of the scope of work set forth in Appendices B and D, which are attached hereto and made a part hereof. The Permittee must follow the plans developed in accordance with Appendix C (as discussed in the following paragraph) while implementing the RFI Work Plan. In addition, the Draft RFI Work Plan must include all conditions that may be contained in the RFI Specific Requirements section of this part of the permit. The RFI Work Plan may contain separate phases of investigative work.
- \* C. Within 120 calendar days after the effective date of this permit, the Permittee shall submit to the Department detailed draft versions of the Project Management Plan, the Data Collection Quality Assurance Plan, the Data Management Plan, and the Health and Safety Plan in accordance with the Scope of Work set forth in Appendix C, which is attached hereto and made a part hereof.
- \* D. Within 60 calendar days after receipt of the Department's written comments on the Draft RFI Work Plan and the supporting Appendix C plans, the Permittee shall modify these draft plans to conform to the Department's comments and shall submit the modified plans to the Department. The determination as to whether or not the modified plans, as resubmitted, conform to the Department's comments shall be made solely by the Department. The Department's comments will be strictly limited to require consistency with the Scope of Work in Appendices B and C, and the specific requirements, listed below. The permittee may request a meeting with the Department within 21 days of receipt of comments to discuss and resolve any questions or issues raised by the Department's comments on the draft work plan. The permittee shall have either 60 days, as stated above, or until 30 days after such meeting to submit the modified plans.

- E. Upon receipt of the Department's written approval of the revised RFI Work Plan and the Appendix C supporting plans, the Permittee shall conduct the RFI in accordance with these approved plans and the schedules therein. The permittee may request a meeting with the Department to discuss and resolve any questions or issues raised while conducting the investigation.
- F. The Permittee shall submit to the Department a draft RCRA Facility Investigation Report (hereinafter "RFI Report") in accordance with the Data Management Plan (Appendix C), Condition IV of Appendix B, and the RFI Work Plan and the schedule therein.
- \* G. If upon review of the draft RFI Report or at any time after the issuance of this permit the Department determines that additional investigation is required (e.g., new SWMUs or AOCs or new releases at existing SWMUs or AOCs are identified), the Permittee shall conduct additional RFI work as directed by the Department, consistent with Appendix B and submit a second draft RFI Report. The finding of new SWMUs or AOCs must be reported to the Department in writing within 15 calendar days of their discovery. The permittee may request a meeting within 21 days of receipt of the Department's comments to discuss and resolve any questions or issues that are raised by the Department's requirement to conduct additional RFI work.
- \* H. Within 60 calendar days after receipt of the Department's written comments on the draft or second draft RFI Report (if applicable pursuant to the preceding paragraph), the Permittee must modify the report to conform to the Department's comments and resubmit the modified RFI Report to the Department. The determination as to whether or not the modified or final RFI Report, as resubmitted, conforms to the Department's comments shall be made solely by the Department in writing. The Department's comments will be strictly limited to require consistency with the Scope of Work in Appendices B and C, and the specific requirements, listed below. The permittee may request a meeting with the Department within 21 days of receipt of comments to discuss and resolve any questions or issues raised by the Department's comments on the draft or second draft RFI report. The permittee shall have either the 60 days, as stated above, or until 30 days after such meeting to submit the modified report.

## II. SPECIFIC REQUIREMENTS

- \* These specific conditions are written to supplement Appendix B. Each section below (unless otherwise stated) corresponds to a section of Appendix B and includes additional detailed conditions that must be included in the RFI Work Plan. To the extent that

any requirements herein were previously completed, or any documents or reports required to be submitted were previously submitted, the permittee is not required to reperform such requirements or resubmit such documents or reports.

A. Requirements of RCRA Facility Investigation (RFI):

- \* 1. As part of the RFI, the permittee must have determined the impact of past and present production and disposal activities on the soil and ground water at the Lenox China facility. The permittee must have proposed sampling plans and/or submitted reports that adequately assessed the nature and extent of contamination (if any) of the following areas of concern where waste and/or products were managed and other discharges to ground water have occurred or provide justification that the areas have not been impacted by past activities. For all SWMUs, the requirements of the RFI as outlined in Appendix B, Part I, must be fulfilled and it must be determined if the units listed below should be included in an Interim Remedial Measure, Corrective Measures Study, Detection Monitoring Program or if further investigation is necessary.

a. The following Solid Waste Management Units (SWMUs) were identified at the Lenox China Facility.

1. Degreaser Sludge Pit
2. Sludge Disposal Area
3. Waste Pile
4. Polishing Lagoon
5. Tilton Road Pond
6. Underground Effluent Transfer Pipe
7. Equalization Sump
8. Wastewater Treatment Piping
9. Underground Storage Tanks
- \*10. Glaze Basin
- \*11. Slip Basin
- \*12. Drum Storage Area

NOTE:

\*

The glaze basin, slip basin and drum storage area were RCRA regulated units. Both the glaze and slip basins were closed in 1990 and both basins are subject to post-closure requirements. The Drum Storage Area was closed in August of 1990.

- \* b. The following Area Of Concern (AOC) was identified at the Lenox China Site:

- Area Between Well #10 and Aloe Street



2. The permittee must determine the hydrogeology and background soil and ground water quality at the site.

B. Contents of Facility Background Report

- \* 1. The Facility Background Report must, to the best of Lenox China's knowledge, include all activities, past and present, that have or may have caused a release or discharge, such as the production, transport, storage, disposal, treatment, spill and discharge of products and waste, including estimates of volume, location and dates of these activities. The permittee must use Appendix B, Part II as guidance. The Facility Background Report should reference the compendium of reports entitled Supplemental Information Solid Waste Management Units Lenox China, Pomona, New Jersey, dated September 1990 and other previous investigative work as meeting part of the RFI requirements. Specifically, the following items must be included:

- a. The past operating history and procedures for underground storage tanks must be explained.
- b. Lenox must also provide the following information concerning the tanks:

- listing of all tanks
- date tanks were installed
- capacity of the tanks
- tank construction material
- tank contents
- source of tank contents
- dates that tanks were taken out of service
- soil sampling or RI work related to tanks

If such information was previously obtained, the permittee may instead, submit a copy of the relevant documents.

- c. The origin and past operating history of the Waste Pile (SWMU #3) must be determined.
- d. Referencing the trichloroethylene (TCE) investigation and remediation Report and/or providing new information on the sources of TCE contamination.

C. Contents of RCRA Facility Investigation (RFI) Work Plan

1. The permittee must propose the sample locations and amount of samples needed to define the background soil and sediment quality.

- a. Lenox must conduct a soil investigation in those areas where past discharges have occurred and where suspected or potential contamination is possible. These areas are listed below.

1. Degreaser Sludge Pit
2. Waste Pile
3. Polishing Lagoon
4. Tilton Road Pond
5. Underground Effluent Transfer Pipe
6. Equalization Sump
7. Wastewater Treatment Pipe
8. Underground Storage Tanks
9. Drum Storage Area

- \* 2. Unless already addressed in the Facility Background Report, a minimum of four soil borings are required at each area listed above. (If appropriate, one boring may serve to help characterize more than one area.) Additional borings will be required if the minimum amount is not sufficient to allow an accurate delineation of the vertical or horizontal extent of contamination.

- a. For the underground storage tanks, effluent transfer pipe and wastewater facility piping, at least one sample should be located in the area of the filling and discharge pipe(s) or opening(s) if the location(s) is/are known. Other samples for the tanks should be at the same depth as the bottom of the tanks.

- b. In accordance with N.J.A.C. 7:26-9.9(e), Lenox should avoid, if possible, disturbing the northern portion of glaze basin cap during the investigation of the waste pile.

- c. Soil borings which are greater than 25 feet deep or which intersect the water table require NJDEPE well permits. After the samples are taken, all holes must be sealed by a licensed New Jersey well driller certified to seal borings.

3. The permittee must conduct an investigation to determine the impact of SMWUs on the ground water and to define background ground water quality and site-wide hydrogeology. Ground water monitoring and sampling points must be capable of accurately defining the horizontal and vertical extent of contamination that may be at the site, emanating from the site and/or emanating from each SWMU.

- a. Ground water samples and/or ground water elevations, as applicable, will be taken from the following onsite wells and piezometers:

Wells MW-1, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9,  
MW-10, MW-15 (samples)

Piezometers P-5, P-18, P-21 (elevations)

- b. Lenox must conduct an investigation to attempt to determine the origin of the zinc which has been detected in Monitoring well #3.
- \* c. Lenox shall install one monitoring well. It will be located on the northeastern edge of the property down gradient of the degreaser sump. This well will be screened in the Upper Cohansey aquifer. Monitor well specifications are given in Appendix D.
- \* 4. All soil and sludge samples in areas where past discharges have occurred must be analyzed for lead, zinc volatile organic compounds and any other specific hazardous compounds that are known to have been contained within any past discharges. In addition, the permittee must also propose the parameters to be analyzed for that will sufficiently quantify the impact of the discharge(s). The Department will evaluate this proposal in terms of the criteria set forth in N.J.A.C. 7:14A-6.15(d)2i.1-9 and ii.1-10. The permittee will be notified in writing of the Department's decision on the proposed alternate analyses.

Ground water samples will be sampled and analyzed in accordance with Table 2 of the Detection and Corrective Action Ground Water Monitoring Requirements and Standards, Part III-DGW section of this permit. Ground water sampling and analyses for additional parameters may be required based on results of soil and sludge sampling.

#### D. Contents of RCRA Facility Investigation (RFI) Report

1. Lenox shall prepare a comprehensive analysis and summary of the results derived from the RCRA Facility Investigation, and make recommendations for any additional investigations as required by Appendix B, Section IV.
2. The RFI Report must document that the data produced by the investigation are sufficient in quality and quantity to fully describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support any Interim Remedial Measures, Corrective Measures, and/or Detection Monitoring Program.

**CORRECTIVE MEASURES STUDY**

The Permittee has already partially completed the requirements of this part of this permit. As part of the final approval of the RCRA Facility Investigation (RFI) Report, the Department will notify the Permittee, in writing, whether or not an additional Corrective Measures Study (CMS) must be undertaken as a requirement of this permit. The Department will use the results of the RCRA Facility Investigation as the basis for requiring such a Corrective Measures Study and the specific area(s) that need corrective measures. In the Corrective Measures Study, the Permittee must identify, screen, evaluate, and develop the alternative or alternatives capable of removal, containment, and/or other remediation of all significantly (as defined by the Department based on applicable regulations and standards) polluted media. All alternatives must be evaluated based on technical, environmental, human health, and institutional concerns. The Permittee's preferred alternative must be identified and justified and its conceptual design developed. The Corrective Measures Study must also include a proposal for ground water monitoring to determine and/or verify the effectiveness of the preferred alternative. The permittee may petition the Department to impose Alternate Concentration Limits [ACLs] consistent with applicable regulatory requirements.

Based on the results of the approved CMS, the Department shall select a remedial alternative that will (1) be protective of human health and the environment; (2) meet the minimum protection standards that the remedy must achieve in order to be protective of human health and the environment; (3) control the source(s) of the release(s) of contaminants so as to reduce or eliminate, further releases that might pose a threat to human health or the environment; and, (4) meet all applicable promulgated waste management standards.

In conformance with N.J.A.C. 7:14A-2.12, the Department shall prepare a Major Modification to this permit requiring the implementation of any selected corrective measure(s) and establishing media protection standards in accordance with applicable regulations. Issuance of the Major Modification of this permit shall follow the procedures outlined under N.J.A.C. 7:14A-7 and 8.

To the extent that any of the requirements in this Part have already been performed by the permittee or any of the documents and reports required in this Part were previously submitted by the Permittee prior to the effective date of this permit, such tasks need not be repeated and such documents or reports need not be resubmitted. However, addendums or modifications to such reports or documents could be required if needed to meet permit requirements.

## I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. Within ninety (90) calendar days after receipt of the Department's written final approval of the RFI Report and determination that some form of corrective action is needed, the Permittee shall submit to the Department a draft Corrective Measures Study Work Plan (hereinafter, "CMS Work Plan") in accordance with the scope of the work set forth in Appendix F which is attached hereto and made a part hereof.
- \* B. Within thirty (30) calendar days after receipt of the Department's written comments on the draft CMS Work Plan, the Permittee shall modify the draft CMS Work Plan to conform to the Department's comments and shall submit the modified CMS Work Plan to the Department. The determination as to whether or not the modified CMS Work Plan, as resubmitted, conforms to the Department's comments shall be made solely by the Department. The Department's comments shall be strictly limited to require consistency with Appendix F. The permittee, upon receipt of the Department's comments, may, within 14 days, request a meeting with the Department to discuss and resolve any questions or issues<sup>s</sup> raised by the Department's comments on the work plan. The permittee shall have 21 days after such meeting to resubmit the draft work plan.
- \* C. Upon receipt of the revised CMS Work Plan the Department shall approve and/or modify the Work Plan. This approval and/or approval with modification shall be given in writing. Upon receipt of the Department's written final approval of the CMS Work Plan, the permittee shall conduct the corrective measures study in accordance with the approved CMS Work Plan and the schedule therein. The permittee, upon receipt of the Work Plan approval may, within 21 days, request a meeting with the Department to discuss and resolve any questions or issues raised by the Department's modifications to the work plan. The schedule applicable to such work plan shall be amended to extend the deadlines therein by 30 days following the date of such a meeting.
- D. The Permittee shall submit to the Department a draft Corrective Measures Study Report (hereinafter "CMS Report") in accordance with Condition III of Appendix F and the approved CMS Work Plan and the schedule therein.
- \* E. Within forty-five (45) calendar days after receipt of the Department's written comments on the draft CMS Report, the Permittee shall modify the draft CMS Report to conform to the Department's comments and shall submit the modified CMS Report to the Department. The determination as to whether or not the modified CMS Report, as resubmitted, conforms to the Department's comments shall be made solely by the Department in writing. Within 21 days, the permittee may request a meeting with the Department to discuss and resolve

any questions or issues raised by the Department's comments, in which case the deadline for the permittee's submittal of the modified Report shall be extended 30 days after the date of such a meeting. The Department's comments will be strictly limited to require consistency with Appendix F.

## II. SPECIFIC CONDITIONS

- \* A. The permittee has conducted and completed a Corrective Measure Study for the remediation of trichloroethylene (TCE) contaminated ground water at the Lenox China facility in Pomona. The report, dated August 1990, was received and approved by the Department and is entitled "Summary Report of the Investigation of Trichloroethylene in Ground Water and Proposed Ground Water Remedial System". A revised report, dated November 1991 and entitled "Addendum To Summary Report of the Investigation of Trichloroethylene in Ground Water and Proposed Ground Water Remedial System", was submitted to the Department and contains revisions to the TCE ground water remediation system and the TCE ground water monitoring program. The revisions to the design of the TCE ground water remediation system have been approved by the Department. The TCE ground water monitoring program, as stated in the revised November 1991 Summary Report has not been approved. The Department will send a comment letter to the permittee that will address the ground water monitoring program for the TCE contamination. Upon approval of a ground water monitoring program for the TCE contamination, the Department will notify the permittee in writing.

**CORRECTIVE MEASURES IMPLEMENTATION**

\* The "Ground Water Remediation Design Report", dated August 1990, and the revised design report entitled "Addendum to August 1990 Groundwater Remediation Design Report", dated October 1991, in addition to the reports entitled "Groundwater Recharge Pilot Study Report, Lenox China Facility, Pomona, New Jersey" dated August 1991 and "Technical Specifications, Ground Water Remediation System", dated September 1991 are hereby approved by the Department with the following additional conditions and requirements. This ground water corrective action program must comply with the requirements of N.J.A.C. 7:14A-6.15(k) and 5.1 et seq.

\* The Corrective Measures Plan prepared by Eder Associates entitled "Addendum to August 1990 Groundwater Remediation Design Report" recommends the use of injection trenches as part of the TCE ground water remediation program. The construction and use of injection trenches for this purpose must follow the guidelines for Underground Injection Control (UIC). (See Section X below.)

I. The applicable list of hazardous constituents and their ground water protection standards are given in Part III-DGW Table 2, pages 7 and 8 of 11. These are the ground water clean-up standards for the remediation of the volatile organics contamination. If subsequent to the effective date of this permit, new or revised clean-up standards are promulgated by the Department, the permittee may petition the Department to modify these standards accordingly.

II. The point of compliance is defined in Part III-DGW Condition 14, page 4 of 10.

III. Pursuant to N.J.A.C. 7:14A-6.15(k)5 and 6:

A. The compliance period for Lenox's corrective action program extends as long as necessary to achieve compliance with the ground water protection standards for volatile organics listed in Part III-DGW Table 2, pages 7 and 8 of 11;

B. Hydraulic controls and recovery of contaminated ground water must be obtained and maintained for the entire plume of contamination exceeding the ground water protection standards established in Part III-DGW, Table 2. Hydraulic control and recovery of ground water may be terminated if concentrations in the ground water are below the ground water protection standards for two consecutive quarterly rounds of sampling for all monitoring wells included in the corrective action program; and

- C. The Compliance Period and corrective action ground water monitoring shall continue until the owner/operator can demonstrate that the ground water protection standards of Part III-DGW, Table 2 have not been exceeded for a period of three years after corrective action measures (i.e. hydraulic control and recovery of ground water) have ceased or that any such exceedence is attributable to offsite or background conditions. If the ground water protection standard is exceeded within this time frame, necessary parts of the corrective action process shall be re-activated unless such exceedence is attributable to offsite or background conditions. In making this demonstration, the ground water protection standards shall be monitored at all corrective action program monitoring wells or as otherwise determined by the Department.

\*IV. Effluent samples shall be taken according to the schedule in Table 4. A sample of recovered ground water prior to treatment should be taken annually in order to evaluate treatment system performance and changes in recovered ground water over time. The first sample should be taken in the first quarterly sampling month listed below after the "start up" month for the ground water treatment system. Subsequent annual samples should be taken in May. These samples should be analyzed for the same parameters listed in Table 4. Data from analyses of any additional samples of this type that the permittee takes must be submitted to the Bureau of Ground Water Pollution Abatement (BGWPA) at the same time as the quarterly data is submitted pursuant to N.J.A.C. 7:14A-2.5(a)12vi.

- A. All sampling will be performed according to the methodology specified in the Department's Field Procedures Manual for Water Data Acquisition.
- B. Effluent Discharge Monitoring Report Forms will be sent from the Department to the Permittee. These forms must be completed and submitted to the first address given in Condition Eleven, Part III-DGW, page 3 of 11. Copies of these forms should be sent to the address in Condition Twelve, Part III-DGW, pages 3 and 4 of 11. The forms must be submitted at the same time and frequency as the ground water monitoring reports.
- C. The established limits in Table 4 shall be met at the sampling point following treatment in the granular activated carbon treatment system prior to distribution to the injection system. If the discharge limit is exceeded at any time, injection of treated water shall cease immediately and shall not commence without approval of the Department. Ceasing the discharge shall not be used as a defense against violation of permit discharge concentration limits or completion of the ground water decontamination.



TABLE 4Corrective Measures Effluent Sampling: Injection Trenches

<u>PARAMETER</u>	<u>EFFLUENT LIMITATIONS</u>	<u>SAMPLING MONTH</u>	<u>SAMPLING TYPE</u>	<u>REPORTING MONTH</u>
pH	(1)*	FebMayAugNov	grab	AprJulOctJan
Total Suspended Solids (TSS)	(1)*	FebMayAugNov	grab	AprJulOctJan
Iron	(1)*	FebMayAugNov	grab	AprJulOctJan
Flow, in gpd	(1)*	FebMayAugNov	continuous	AprJulOctJan
Total Dissolved Solids (TDS)	(1)*	FebMayAugNov	grab	AprJulOctJan
Trichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
1,1-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
cis-1,2-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
trans-1,2-Dichloroethylene	100 ppb	FebMayAugNov	grab	AprJulOctJan
Vinyl Chloride	10 ppb	FebMayAugNov	grab	AprJulOctJan

## NOTES:

(1)\*

Monitoring only is required. No DGW limits have been set at this time. Effluent limits could be set in the future if monitoring data indicate it is necessary.

(2)\*

"Grab" means an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes.

V. The permittee shall also submit quarterly, along with Effluent Discharge Monitoring Report forms, a report to the BGWPA including, for each month in the reporting period, total volume of ground water withdrawn, total volume of treated ground water injected and any upsets or malfunctions in the recovery, treatment or injection systems that may have occurred during the months in that quarter.

VI. The permittee shall submit ground water elevation contour maps quarterly for the entire facility based on water levels obtained during quarterly sampling.

- VII. The permittee must submit a report semi-annually which evaluates the effectiveness of the approved corrective action system.
- VIII. If the Department determines that the ground water corrective action system is not capable of meeting the requirements of this permit, the permittee must submit a plan within 45 days of the Departmental notification which must include but is not limited to the following:

a. The proposed location, depth and construction of the additional wells necessary to meet the permit requirements.

b. The rationale for the proposed locations.

All wells required pursuant to this condition must be installed within 60 days of NJDEPE written approval.

- IX. The Corrective Action outlined in the approved plan shall be initiated as soon as is reasonably possible.
- \* X. The permittee must comply with all applicable requirements of N.J.A.C. 7:14A-5.1. The following program, General Conditions for the Underground Injection Control (UIC) of Class IV wells are specified based on those requirements.

A. Construction Requirements

1. Construction of Injection System

- a) The injection system must be constructed in accordance with the plans submitted.
- b) The area of review for the injection fields shall be determined in accordance with N.J.A.C. 7:14A-5.13(a)1-3. The ground water recovery system must be considered in making this determination.

B. Operation and Maintenance

1. General Requirements

- a) The permittee must obtain a well drilling permit before constructing any well. Applications for well permits can be obtained from:

Water Supply Element  
CN-029  
Trenton, New Jersey 08625

- b) The permittee is required to submit inventory information regarding the well(s) to the

Department when an application is made for a Class IV well drilling permit. This information must consist of the following:

- well drilling permit number
- facility name and location
- name and address of legal contact
- ownership of facility
- owner of property where well is installed
- nature and type of injection well(s)
- operating status of injection well(s)

2. Pursuant to N.J.A.C. 7:14A-5.7(b), the Department required the permittee to obtain this UIC/NJPDES permit for Class IV injection wells. The protection of the underground sources of drinking water require that the injection system be regulated by requirements for corrective action, monitoring and reporting and operation. Pursuant to N.J.A.C. 7:14A-5.9, the following conditions apply:

- a) The permittee does not need to comply with the provisions of the UIC permit if noncompliance is authorized under a temporary emergency permit
- b) The permittee shall retain all monitoring records and all records concerning the nature and composition of injected fluids until five (5) years after completion of any plugging and abandonment procedures.
- c) New injection wells may not commence injection until construction is complete and the permittee has submitted well completion reports and the Department has inspected or otherwise reviewed the new injection wells and finds them in compliance with permit conditions.

#### C. Contingency Requirements

1. Pursuant to N.J.A.C. 7:14A-5.9(a)4, the permittee is required to report to the Department the following conditions within 2 hours:

- a) Any monitoring or other information which indicate that contaminants may endanger a potable supply well.
- b) Any noncompliance with permit conditions or a malfunction of the injection system that may cause contaminated fluid migration to a potable supply well.

2. Pursuant to N.J.A.C. 7:14A-5.9(a)5, the permittee is required to report to the Department the following conditions within 24 hours:
  - a) Any monitoring or information which indicate that a contaminant may cause endangerment to an underground source of drinking water.
  - b) Any noncompliance with permit conditions or a malfunction of the injection system that may cause fluid migration into or between underground sources of drinking water.
3. Pursuant to N.J.A.C. 7:14A-5.4, no UIC authorization will be allowed if a Class IV well causes or allows movement of fluids containing any contaminants into underground sources of drinking water and if the presence of the contaminants may cause a violation of any primary drinking water standards under N.J.A.C. 7:10-5, ground water quality standards under N.J.A.C. 7:9-6 or which may adversely affect the health of humans. If at any time the Department learns that Class IV wells are causing violations as stated above, the Department shall:
  - a) Order the permittee to take such action as is necessary to prevent or stop the violation; and/or
  - b) Take enforcement action.

D. Plugging and Abandonment

1. The permittee shall notify the Department at least 180 days before the conversion or abandonment of the well. Along with this notice, the permittee shall submit a plugging and abandonment plan which will follow the requirements of N.J.S.A 58:4A-4.1 et seq and N.J.A.C. 7:9-9 (sealing of abandoned wells) where applicable.

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

DATE: <sup>242-</sup> MAR 30 1992

SUBJECT: Lenox China HSWA Draft Permit

FROM: Christine J. McCulloch  
Assistant Regional Counsel

TO: Andrew Park  
Hazardous Waste Facilities Branch

The following statements should reflect our March 6, 1992 review of the Lenox China Draft HSWA permit and my original comments to HWFB in July 1991 concerning this draft permit.

# 1. Glaze Basin & Slip Basin

In my original comments I indicated that EPA has a mandate to review all units that might be subject to corrective action. In particular, I was concerned that the Glaze and Slip Basins (regulated RCRA units) were not designated SWMU's under the HSWA permit. During our March 6th discussion you clarified this matter; both units are currently being monitored<sup>1</sup> and the data submitted to the state has indicated that there is no contamination of the area due to these units.

You further indicated that though there is no measurable contamination from these units,<sup>2</sup> the draft permit was revised so that the permittee will provide EPA with all data and information on the closure of the Slip Basin. This will hopefully alert EPA to any change in the status of this unit and provide the Agency with an opportunity to re-evaluate this unit if needed. (i.e. the need for corrective action).

# 2. Definition of SWMU

You indicated that the definition in the permit is used by the Region in all its HSWA permits, though it differs from the definition that appears in the proposed corrective action rule. The definition used by the Region is more "specific" while the proposed definition is more "open". As I explained, the Regional definition could be "limiting" at a future date, but currently poses no problem. It was concluded that the current Regional definition for SWMU will appear in the draft HSWA permit.

<sup>1</sup>The Slip Basin is in the process of being closed. The Glaze Basin has undergone closure (certified) and is currently subject to ground water monitoring. The state will be issuing a post-closure permit for the Slip Basin.

<sup>2</sup> The state has indicated to HWFB, verbally, that the ground water monitoring data has indicated that there is no ground water contamination due to these two regulated units.

3. Modification Section of Module VII ?

The revised modification section (drafted Summer 1992) has been incorporated into this draft HSWA permit.

4. Module VII Revisions ?

The revised draft HSWA permit did not incorporate ORC comments for Section E of Module VII. As I indicated to you on March 6th the current permit language is under. I drafted proposed language; however, HWFB did not revise the sections at issue. I do not care if HWFB uses my proposed language or not, but a change is needed to the text to clarify the conditions. Please make the change before the permit goes final.



ANDY PARK 28  
NYJ 002 325 074

State of New Jersey  
Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation  
CN 413  
Trenton, NJ 08625-0413  
Tel. # 609-984-2902  
Fax. # 609-633-2360

Scott A. Weiner  
Commissioner

Anthony J. Farro  
Director

Mr. Stephen F. Lichtenstein  
Lenox Inc.  
100 Lenox Drive  
Lawrenceville, NJ 08648-2394

12-92 - MAR 30 1992

Re: Preliminary Draft NJPDES-DGW Permit No. NJ0070343 For Lenox China Facility, Pomona, Atlantic County.

Dear Mr. Lichtenstein:

Enclosed is a preliminary draft of the NJPDES-DGW permit for the Lenox China facility in Pomona, Atlantic County. The Bureau of Ground Water Pollution Abatement (BGWPA) has submitted this draft permit for your review prior to public noticing as agreed upon during a January 17, 1992 meeting.

The purpose of this draft permit is to implement a RCRA Facility Investigation (RFI), post-closure of two surface impoundments known as the glaze basin and the slip basin, corrective action for remediation of trichloroethylene (TCE) in the ground water, regulation of two non-hazardous infiltration-percolation lagoons known as the polishing basin and Tilton Road Pond and to monitor ground water quality at the facility.

The remediation of TCE contamination at the facility (as specified in Part VIII-DGW-I), and ground water monitoring requirements (as specified in Part III-DGW), has been implemented through the issuance of an emergency permit in accordance with N.J.A.C. 7:14A-2.2.

Also enclosed for your review is a draft copy of the HSWA permit that will be issued by EPA to Lenox China. Any comments or questions concerning the contents of the draft HSWA permit should be addressed to EPA.

Stephen F. Lichtenstein

Please provide your comments on the NJPDES-DGW preliminary draft permit within seven (7) days of receiving this permit.

If you have any questions regarding this letter, please contact Daryl Clark of my staff at (609) 292-8427.

Sincerely,



Irene Kropp, Chief  
Bureau of Ground Water  
Pollution Abatement

Enclosures

GWQM378

c: Andy Park, USEPA



PUBLIC NOTICE AND STATEMENT OF BASIS  
OF INTENT TO ISSUE A MAJOR MODIFICATION TO AN EXISTING  
NJPDES/GROUND WATER MONITORING PERMIT  
ISSUED UNDER THE NEW JERSEY WATER POLLUTION CONTROL ACT AND THE  
NEW JERSEY SOLID WASTE MANAGEMENT ACT AND THE RULES PROMULGATED  
PURSUANT THERETO AND  
NOTICE OF USEPA'S INTENT TO ISSUE A  
HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984 (HSWA) PERMIT

PROCESSING OFFICE

New Jersey Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation  
Ground Water Quality Management Element  
CN-029  
Trenton, New Jersey 08625  
(609) 292-8427

United States Environmental Protection Agency, Region II  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278  
(212) 264-9539

NAME AND ADDRESS OF APPLICANT

Lenox Inc.  
100 Lenox Drive  
Lawrenceville, New Jersey 08648

NAME AND LOCATION OF FACILITY

Lenox China, a division of Lenox Incorporated  
Tilton Road  
Pomona, New Jersey 08240  
Atlantic County

NJPDES NUMBER: NJ0070343  
EPA I.D. NUMBER: NJD002325074

DESCRIPTION OF FACILITY

Lenox China, a division of Lenox Incorporated, is located in a rural area on the outskirts of the Town of Pomona in southeastern New Jersey. The facility had manufactured ceramic

dinnerware and giftware, but now manufactures only dinnerware. The manufacturing process includes the progressive dewatering of clay solution (slip) to form the shape of the ceramic pieces. The pieces are then kiln fired, coated with a leaded glaze mixture, and then refired. Process wastes include waste solvent sludge, which is drummed and disposed of off site, clay solution waste (slip) and glaze waste (fritted lead compounds).

#### DESCRIPTION OF PERMITS

The New Jersey Department of Environmental Protection and Energy (NJDEPE) intends to issue a New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) Permit for the purpose of:

- a. Monitoring ground water quality at the site.
- b. Regulating operation of the two infiltration/percolation lagoons known as the Polishing Basin and Tilton Road Pond.
- c. Investigating waste management areas at the facility and determining the nature and extent of contamination that may have been caused by any past or current discharges.
- d. Developing and implementing any necessary interim remedial measures at any time during the investigation.
- e. Determining and evaluating the nature, source and extent of trichloroethylene (TCE) contamination at the site.
- f. Developing and implementing the necessary corrective measures to remediate TCE contamination.
- g. Implementing post-closure of the RCRA regulated surface impoundments known as the slip basin and the glaze basin.

This notice is being given to inform the public that the NJDEPE has prepared a draft NJPDES permit that is in accordance with the provisions of the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and its implementing regulations (N.J.A.C. 7:14A-1 et seq.).

This NJPDES permit is intended to be consistent with any HSWA permit for this facility issued or to be issued by USEPA. To the extent that this permit is inconsistent with any such HSWA permit, it is the intent of the NJDEPE to interpret or modify this permit to make it consistent with any such HSWA permit. However, this permit may contain certain additional requirements not included in the HSWA permit, such as long term ground water or discharge monitoring.

Lenox China is an existing facility and implementation of the NJPDES requirements are the enforcement mechanism by which existing pollutant discharges are brought into conformance and compliance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharge of pollutants and protect the public health and the environment.

This public notice is also being given to inform the public that the United States Environmental Protection Agency has prepared a draft HAZARDOUS AND SOLID WASTE AMENDMENTS (HSWA) PERMIT in accordance with the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984 (42 U.S.C. SS6901 et seq.)

The HSWA permit requires the permittee to:

- a. Determine the nature, extent, direction and rate of migration of hazardous waste, including hazardous constituents, in soils, ground water, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
- b. Certify annually that the generation of hazardous waste is minimized to the extent practicable, and submit and implement a hazardous waste reduction plan;
- c. Comply with land disposal restrictions;
- d. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSWA regulations promulgated on July 21, 1990;
- e. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and
- f. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

#### DESCRIPTION OF DISCHARGE

A documented release of trichloroethylene (TCE) to the ground water has occurred. Investigations conducted by Lenox indicate there are two sources of this contamination. The two sources are a suspected antecedent drum storage pad and degreaser sump. As part of the corrective measures implementation, this permit authorizes a discharge of treated ground water back to the ground via injection trenches.

Twelve (12) Solid Waste Management Units (SWMUs) and one (1) Area of Concern (AOC), have been identified at the Lenox China facility. (Another AOC, an area of stressed vegetation, has since been eliminated as an AOC.)

#### RECEIVING WATERS

The ground waters of the State. The actual and potential discharges are to the Miocene Age Cohansey Sand which is underlain by the Kirkwood Formation.

#### PUBLIC COMMENT PROCEDURES

The 45 day mandatory public comment period shall begin with the publication of this notice. All interested persons may submit written comments on the draft NJPDES-DGW permit to:

Assistant Director  
Ground Water Quality Management Element  
New Jersey Department of Environmental Protection and Energy  
CN-029  
Trenton, New Jersey 08625

All written comments on the draft HSWA permit should be submitted to:

U.S. Environmental Protection Agency, Region II  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278

All comments shall be submitted within 45 days of the date of this public notice. All persons, including applicants, who believe that any condition of the permits is inappropriate or that the NJDEPE's and EPA's tentative decision to issue these permits as final agency actions is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEPE and EPA with respect to the requirements being applied to this facility. After the close of the public comment period, the NJDEPE and EPA will make a final decision. The NJDEPE and EPA will respond to all significant and timely comments when a final decision is made. The owner or operator and each person who has submitted written comments will receive notice of NJDEPE's and EPA's final decision.

Any interested person may request in writing that NJDEPE and the EPA hold a nonadversarial public hearing on the draft document. This request shall state the nature of the proposed issues to be raised in the hearing and shall be submitted within 45 days of the date of this public notice to NJDEPE, Assistant Director, Ground Water Quality Management Element, and the USEPA, Air and Waste Management Division, Hazardous Waste Facilities Branch at the addresses cited above. A public hearing will be conducted whenever the NJDEPE and EPA determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

After the close of the comment period, the NJDEPE and the EPA will review and consider all comments received, together with a consideration of the requirements of N.J.A.C. 7:26-1 et seq, N.J.A.C. 7:14A-1 et seq and HSWA. The NJDEPE and EPA will make final permit decisions and, if they are substantially unchanged from the proposed decision, will notify all persons who submitted comments or requested notification. If the final permit decision is substantially changed from the proposed decision, the NJDEPE and EPA will issue a public notice of the decision.

All persons are advised that they must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the comment period. In any review of the final permit decision, no issues may be raised that were not submitted to the administrative record unless good cause is shown for the failure to do so.

Copies of this document have been sent to the Mayor, Municipal Clerk, Planning Board, Sewerage Authority, Health Officer, and the Environmental Commission of Galloway Township. Please bring this notice to the attention of all persons who would be interested in this matter.

#### ADMINISTRATIVE RECORD

This public notice is based on the administrative record which is on file at the offices of the NJDEPE, Division of Publicly Funded Site Remediation located at 401 East State Street, City of Trenton, Mercer County, New Jersey. The administrative record for the HSWA permit is on file at the offices of the Permits Administrative Branch, USEPA-Region II, 26 Federal Plaza, New York, New York. The draft permits and all data submitted by the applicant is available as part of the administrative record. The administrative record maintained at NJDEPE and the EPA is available for inspection, by appointment, between 8:30 A.M. and 4:00 P.M., Monday through Friday. Appointments may be scheduled by calling the NJDEPE at (609) 292-0400 and the EPA at (212) 264-9539.

Arnold Schiffman, Assistant Director  
Ground Water Quality Management

## TABLE OF CONTENTS

Permit Page	
Fact Sheet	Page 1 of 5
Figure 1	
General Conditions For All NJPDES-DGW Permits	Part I-DGW Page 1 of 1
Permits And Dispute Resolution	Part II-DGW Page 1 of 2
Detection And Corrective Action Ground Water Monitoring Requirements And Standards	Part III-DGW Page 1 of 11
Waste Water Effluent Limitations And Monitoring Requirements	Part III-DGW-I Page 1 of 2
Additional General Conditions For Industrial Discharges By Infiltration-Percolation Lagoons	Part IV-DGW Page 1 of 3
Interim Remedial Measures	Part V-DGW Page 1 of 1
RCRA Facility Investigation	Part VI-DGW Page 1 of 7
Detection Monitoring Program	Part VII-DGW Page 1 of 2
Corrective Measures Study	Part VIII-DGW Page 1 of 3
Corrective Measures Implementation	Part VIII-DGW-I Page 1 of 6
Special Conditions For Post-Closure Of The RCRA-Regulated Lagoons	Part IX-DGW Page 1 of 2
Permit Appendices:	
Appendix A: Interim Remedial Measures: Scope Of Work	Pages 01 - 03
Appendix B: RCRA Facility Investigation: Scope Of Work	Pages 04 - 25
Appendix C: RFI Supporting Plans: Scope Of Work	Pages 26 - 34

Appendix D: Monitoring Well Specifications  
And Certification Forms

Pages 35 - 41

Appendix E: Detection Monitoring Program

Pages 42 - 50

Appendix F: Corrective Measures Study:  
Scope Of Work

Pages 51 - 57

Ground Water Monitoring Reports  
Transmittal Sheet And Analysis Forms

7 Pages

Quality Assurance/Quality Control  
(QA/QC) Package

44 Pages

## FACT SHEET

### FOR NJPDES DISCHARGE TO GROUND WATER PERMIT

---

#### NAME AND ADDRESS OF APPLICANT:

Lenox, Inc.  
100 Lenox Drive  
Lawrenceville, NJ 08648

#### NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Lenox China, a division of Lenox Incorporated  
Tilton Road  
Atlantic County  
Pomona, New Jersey 08240

#### DESCRIPTION OF FACILITY:

Lenox China, a division of Lenox Incorporated, is located in a rural area on the outskirts of the Town of Pomona in southeastern New Jersey. The facility had manufactured ceramic dinnerware and giftware, but now only manufactures dinnerware. The manufacturing process includes the progressive dewatering of clay solution (slip) to form the shape of the ceramic pieces. The pieces are then kiln fired, coated with a leaded glaze mixture, and then refired. Process wastes include waste solvent sludge, which is drummed and taken off site for incineration, clay solution waste (slip) and glaze waste (fritted lead compounds).

#### RECEIVING WATERS/HYDROGEOLOGY:

The ground waters of the State. Discharge is to the Miocene Age Cohansey Sand and Kirkwood Formation. The Cohansey Sand consists of irregularly bedded unconsolidated sand and gravel which contain varying percentages of clay and silt. Discontinuous clay layers are also present. Underlying the Cohansey Sand is the Kirkwood Formation, which is made up of dense, diatomaceous clay units and coarse, unconsolidated sands. Three principal aquifers, known as the Upper Cohansey, Lower Cohansey and Lower Kirkwood, underlie the facility and comprise the Cohansey-Kirkwood Aquifer System. Depth to ground water is shallow across the site, ranging from approximately 3 to 10 feet below the ground surface. Ground water flow direction is generally north-northeast.

#### DESCRIPTION OF DISCHARGE:

A documented release of trichloroethylene (TCE) to the ground water has occurred at the Lenox China facility and the



contaminated ground water has migrated offsite of Lenox property. Investigations conducted by Lenox indicate the presence of two TCE plumes which probably originated from two different source areas. The sources of the TCE are believed to be an antecedent degreaser sump and drum storage pad (i.e. both which are no longer in existence). As part of the corrective measures implementation, this permit authorizes a discharge of treated ground water back to the ground via injection trenches.

In addition to the TCE discharge, the potential for additional contamination exists as a result of past and present activities at the Lenox China facility. A total of twelve (12) Solid Waste Management Units (SWMUs) were identified by USEPA as a result of a RCRA Facility Assessment (RFA). The following is a list and description of the SWMUs and Area of Concern (AOC).

#### SWMUs Identified at Lenox China Facility

1) Degreaser Sludge Pit

The degreaser sludge pit is located outside of the northeast portion of the manufacturing building. TCE sludge from a degreaser located inside of the building flows through a pipe and is collected in 30 gallon drums at the pit. This area was near the site of a previous degreaser sludge pit. The former degreaser sludge pit is suspected of being the source of one of the TCE plumes at the site.

2) Sludge Disposal Area

Waste sludge containing lead was dredged from the slip basin and placed in an area northeast of the basin. The sludge disposal area is approximately 200 feet by 200 feet. In 1975, this area was paved with asphalt and is now used as a parking area.

3) Waste Pile

During excavation of the glaze basin in 1988, a seam in the west wall of the basin, approximately 15 feet long and 6 to 12 inches thick, containing a white, clayey material was discovered. The material tested high for lead concentration and has the appearance of glaze waste material. Lenox suspects the material may be the remnants of an antecedent basin used to store glaze waste.

4) Polishing Lagoon

A non-hazardous waste lagoon that is part of the facility waste treatment system is used for temporary storage of non-hazardous wastewater generated by plant activities. It is rectangular and measures approximately 60 feet by 90 feet and has an average depth of 6 feet. The estimated capacity of the basin is 110,000 gallons. The polishing basin received wastewater pumped from the slip basin until use of that basin

was discontinued in 1987. Recent modification of the waste treatment plant allows non-hazardous wastewater to be transferred directly from a Rex Clarifier (a device for settling solids from liquid) to the polishing basin, where further clarification takes place. The basin is periodically dredged to remove accumulations of solids and sludge.

5) Tilton Road Pond

This is a non-hazardous temporary storage lagoon that has an estimated capacity of 125,000 gallons. It receives treated wastewater from the polishing basin and is monitored for biological and chemical quality. Wastewater from the Tilton Road Pond is released into a culvert which runs under Tilton Road and into a storm water ditch. The ditch discharges the wastewater into the Jack Pudding Branch of Babcock Creek.

6) Underground Effluent Transfer Pipe

This unit consists of approximately 200 feet of steel piping that was used to transfer liquid from the glaze basin to the slip basin. Eighty feet of the pipe nearest to the slip basin has been removed.

7) Equalization Sump

Process wastewater from manufacturing areas was directed to this sump prior to treatment. The sump is made of reinforced concrete and its dimensions are approximately 8 feet by 12 feet and 6 feet in depth. It has an estimated capacity of 3,600 gallons. The sump was taken out of service in 1988. It was subsequently used to recycle plaster water. The sump was then cleaned, emptied and removed. The area where the sump was located has been graded and covered with crushed stones.

8) Piping

This includes all piping used in the wastewater treatment facility at Lenox China.

9) Underground Storage Tanks

The underground storage tanks, located beneath the main manufacturing building, were removed in July 1987. Although Lenox states that tank removals were performed in accordance with New Jersey regulations and that information regarding tank removal was submitted, the Department has not received such documentation.

10) Glaze Basin

This is a RCRA regulated hazardous waste lagoon which was closed in July 1990 in accordance with applicable regulations. This lagoon was used to store waste glaze material consisting of clay, lead carbonate and lead glass. The total volume of waste deposited in the lagoon was approximately 1,200 cubic yards. During closure, most of the waste was removed, but a small amount of residual waste remains along the bottom and the north sidewall.

11) Slip Basin

This RCRA regulated hazardous waste lagoon was closed in September 1990. This lagoon was used to store clay waste material from 1954 to 1970 and process wastewater containing clay, lead carbonate, frit (low solubility lead compounds in glass form) and silica from 1970 to 1981. From 1981 to 1987, the lagoon received small amounts of process wastewater and was used for surge capacity for the wastewater treatment plant. The total volume of the lagoon was 7,100 cubic yards. The slip basin was closed by raising the waste material above the seasonal high water table, stabilizing the waste material in situ and capping.

12) Drum Storage Area

This RCRA regulated unit consists of an impermeable concrete and asphalt paved area designed to store 30 gallon drums of TCE waste sludge. The storage area drains to a sump pit that is designed to collect spilled material and pump it back into containers. The Drum Storage Area underwent RCRA closure in 1990 and now only stores hazardous waste for less than ninety (90) days. This area is also the site of a previous TCE drum storage area. The previous drum storage area is suspected of being the source of one of the TCE plumes at the Lenox China site.

Area Of Concern (AOC)

1) Area Between Monitoring Well #10 and Aloe Street

This area was not identified in the RFA. Drilling operations at this location revealed the presence of discolored surficial soils. Subsequent investigations conducted by Lenox found that slip waste had been deposited in this area.

DESCRIPTION OF PERMIT

The New Jersey Department of Environmental Protection and Energy (NJDEPE) intends to issue a New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) Permit for the purpose of:

- Monitoring ground water quality at the facility.
- Regulating operation of the two infiltration/percolation lagoons known as the polishing basin and Tilton Road Pond.
- Investigating waste management areas at the facility and determining the nature and extent of contamination caused by any past or current discharges.
- Developing and implementing any necessary interim remedial measures at any time during the investigation.

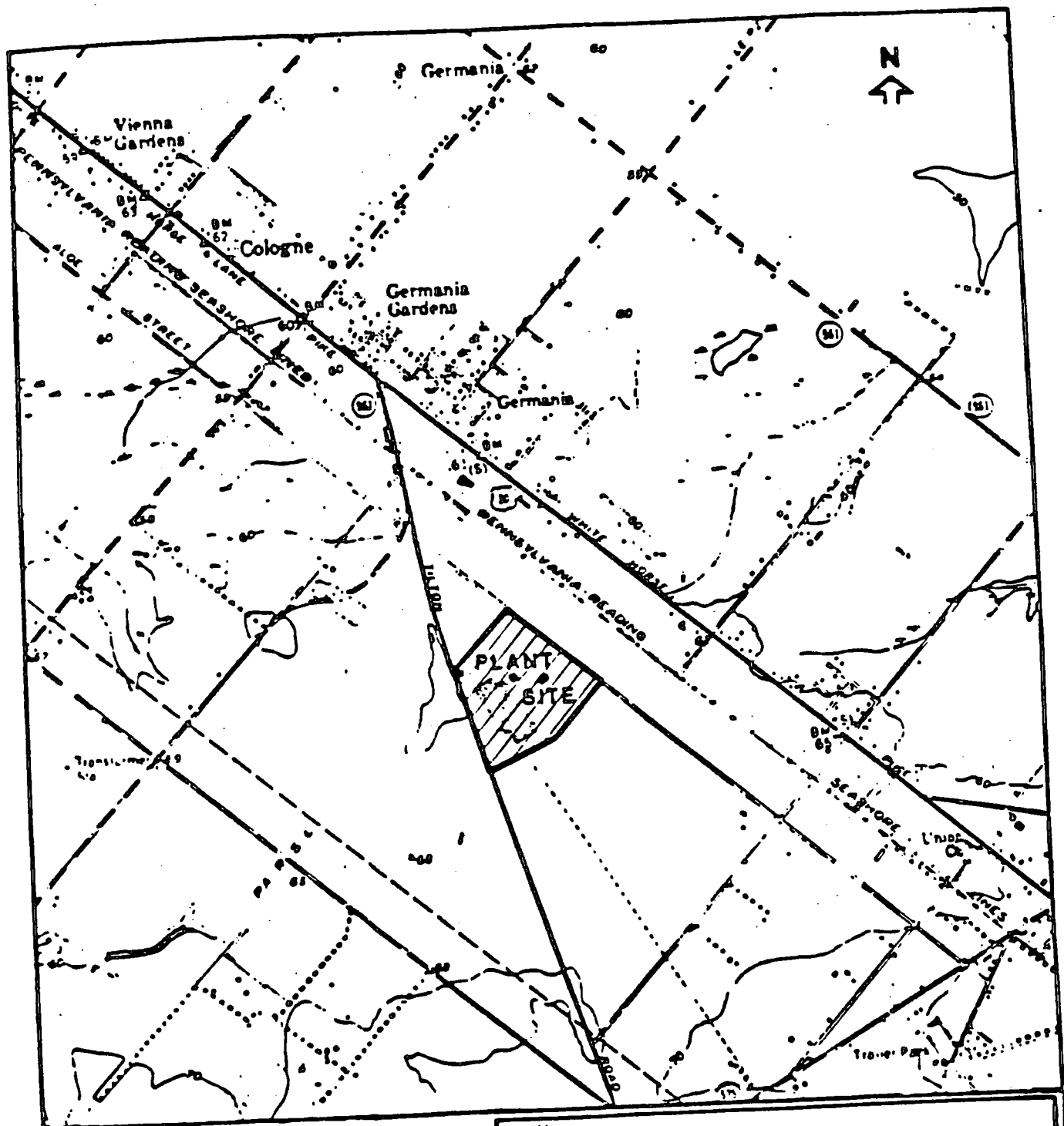
- Determining and evaluating the nature, source and extent of trichloroethylene (TCE) contamination at the site.
- Developing and implementing the necessary corrective measures to remediate the TCE contamination.
- Implementing post-closure of the RCRA regulated surface impoundments known as the slip basin and the glaze basin.

This NJPDES permit is intended to be consistent with any HSWA permit issued or to be issued by USEPA for this facility. To the extent that any aspect of this permit is or may be inconsistent with such HSWA permit, this permit shall be interpreted or modified so as to make it consistent with such HSWA permit. The permittee may request and the NJDEPE shall agree to modify this permit to make it consistent with such HSWA permit. However, this permit may contain additional requirements not included in the HSWA permit such as long term ground water or discharge monitoring.

Lenox China is an existing facility and implementation of the NJPDES requirements are the enforcement mechanism by which existing pollutant discharges are brought into conformance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharges of pollutants and protect the public health and the environment.

#### PERMIT CONDITIONS

The NJPDES-DGW permit has requirements listed in the attached sections regarding General Conditions, Interim Remedial Measures, RCRA Facility Investigation, Detection and Effluent Monitoring Programs, Corrective Measures Study, Corrective Measure Implementation and Post Closure Requirements.



# LOCATION OF LENOX CHINA INC. PLANT SITE

LENOX CHINA INC.  
Pomona, New Jersey

Geraghty  
& Miller, Inc.

DATE: 12-1-80  
BY: E. WERTH  
CHECKED BY: E. WILSON  
PROJECT: 8001 E. WERTH

SCALE: 1" = 2000'  
DATE: DEC-1982

1

State of New Jersey  
Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation

**GENERAL CONDITIONS FOR ALL NJPDES-DGW PERMITS**

The New Jersey Pollutant Discharge Elimination System (NJPDES) regulations (N.J.A.C. 7:14A-1 et seq.) as authorized by the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A et seq.) identify requirements for all Discharge to Ground Water Permits. Information concerning these general permit requirements may be found in the following sections of the NJPDES regulations:

<u>Permit Requirement</u>	<u>Citation</u>
General Information	Subchapter 1
General Requirements for the NJPDES Permit	Subchapter 2
Additional Requirements for an Industrial Waste Management Facility	Subchapter 4
Additional Requirements for Underground Injection Control Program	Subchapter 5
Additional Requirements for Discharges to Ground Water (DGW)	Subchapter 6
Procedures for Decision Making	Subchapter 7
Public Comments and Public Notice	Subchapter 8
Filing Requirements for NJPDES Permits	Subchapter 10
Public Access to Information and Requirements for Departmental Determination of Confidentiality	Subchapter 11

## PERMITS and DISPUTE RESOLUTION

- A. Within 90 calendar days after the Effective Date of the Permit, or upon becoming subject to applicable permitting requirements, which ever is later, the permittee shall apply for all necessary Federal, State, and local permits or permit renewals for existing activities, and where applicable, former activities (i.e. activities that require but do not already have a current, unexpired permit), or for which a renewal application has already been filed in accordance with the requirements of N.J.A.C. 7:14A-1 et seq., N.J.A.C. 7:26-1 et seq., and N.J.A.C. 7:27-8, and other applicable statutes and regulations. Permitted or regulated activities may include, but are not limited to, discharge to surface water bodies; discharge to domestic treatment plants; treatment works approvals; discharges to the air; discharges to lagoons, surface impoundment, cesspools, septic systems, landfills; existing hazardous waste underground storage tanks; land application of contaminated materials, and any activities listed in the specific requirements section of the Interim Remedial Measures part of this permit. For NJPDES permits, a renewal application must be submitted at least 180 days prior to the current permit's expiration date.
- B. The permittee shall submit complete applications for all Federal, State, and local permits required to carry out the obligations of this Permit. An example of such a permit would be a discharge to surface water proposed and approved as part of an interim remedial measure.
- C. This Permit shall not relieve the permittee from obtaining and complying with all applicable statutes and regulations while carrying out the obligations imposed by this permit.
- D. This Permit shall not preclude the Department from requiring that the permittee apply for any permit or permit modification issued by the Department under the authority of the Water Pollution Control Act, N.J.S.A. 58-10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and/or any other statutory authority for the matters covered herein. The terms and conditions of this Permit shall not be pre-empted by the terms and conditions of any such permit that is more stringent than the terms and conditions of this Permit.
- E. The permittee shall use its best efforts to informally and in good faith resolve all disputes or differences of opinion. If however, disputes arise concerning submissions required under this permit, including, but not limited to, implementation of workplans, approval documents, scheduling of any work, selection, performance or completion of any

corrective action or any other obligation required under this permit, the permittee shall notify the Bureau of Ground Water Pollution Abatement (BGWPA) immediately of such disputes and within thirty days of notification submit a written statement to the BGWPA that argues its position. The written argument shall set forth the permittee's specific points of contention; position and reason for its position; and any additional matters that the permittee considers necessary or relevant for the BGWPA's determination. If the dispute cannot be resolved informally within 60 days of receipt of the written argument, the BGWPA will provide the Permittee its decision on the dispute. This decision shall be considered either an existing permit requirement or it shall be incorporated into the permit by either minor or major modification, whichever is appropriate pursuant to specific permit conditions and N.J.A.C. 7:14A-2.12 and 2.14. The permittee may challenge any such modification as provided by N.J.A.C. 7:14A-8.9.



**DETECTION AND CORRECTIVE ACTION  
GROUND WATER MONITORING REQUIREMENTS AND STANDARDS**

1. The locations of existing ground water monitor wells required to be sampled or monitored are shown on Figure 2, Part III-DGW, Page 11 of 11.
2. The permittee shall provide the Bureau of Ground Water Pollution Abatement with a minimum of two weeks notification prior to the installation of any ground water monitor wells at the site.
3. The owner or operator shall inspect each ground water monitor well on a monthly basis for structural integrity and/or damage. The permittee shall maintain a complete inspection record indicating dates of inspection, inspector's name, and conditions observed. These records shall be made available to the Department upon request. Failure to maintain or submit records upon request shall be a violation of the conditions of this permit.
4. The permittee is required to take any and all reasonable steps necessary to protect the structural integrity of monitoring or recovery wells, treatment systems, or any other potentially harmful or easily damaged equipment on the site and to limit public access by constructing fences, barricades, or any other structures or means necessary to restrict access to the equipment. These structures must be maintained to restrict access.
5. On property on which hazardous waste remains after closure, the owner or operator will not use the property in any way which will disturb the integrity of the containment and well monitoring system in accordance with N.J.A.C. 7:26-9.9 (e).
6. If the monitor wells are damaged or are otherwise rendered inadequate for their intended purpose, the Bureau of Ground Water Pollution Abatement shall be notified within five (5) days of discovery in writing indicating:
  - a. Which wells were damaged or rendered inadequate for their intended use.
  - b. The cause and extent of damage or the reason for the inadequacy.
  - c. If the sampling schedule as required in this permit will not be met or if the results of the sampling may be non-representative.
  - d. The date that the well will again be operational. Damaged wells must be replaced or repaired within 60 days after

the damage has occurred, or (for offsite wells which must be replaced) as soon thereafter as all necessary access, permission or authorization to install a new well is obtained. If any of the following situations have occurred, redeveloped or replacement wells must be sampled not prior to 14 days after development but no later than 28 days after installation:

Situation 1: Wells have been damaged in a way that affected the quality of previously taken ground water samples.

Situation 2: Due to damage to a well a regularly scheduled sampling event has been missed.

Note: Wells in situation 1 above that do not have to be redeveloped (only purged) must be sampled within five days of the discovery of the damage. If the next regularly scheduled sampling for the well(s) is within 21 days of the last day that the well(s) should be sampled under 1 or 2 above, only the regular sampling event is required.

e. The next date that the well will be sampled;

A replacement well must meet the construction requirements established by the Department. A valid New Jersey well permit is required prior to the installation of the replacement well. Failure to follow these procedures is a violation of this permit and may subject the permittee to the provisions of N.J.S.A. 58:10A-10.

7. Satisfactory ground water wells are defined in Section 6.13 of the NJPDES regulations and shall be subject to Departmental approval. If ground water monitoring wells do not meet these standards, they must be replaced with new wells meeting Departmental standards.
8. A Ground Water Monitor Well Certification (Forms A and B) shall be completed within 30 days for each existing well and, for each proposed ground water monitor well, within 30 days of the installation of the ground water monitor well. Information for each well must be shown on a separate form.
9. For an existing well, if information required on the Ground Water Monitoring Certification (Forms A and B) cannot be determined or the ground water monitoring well is not adequately constructed to meet the requirements of this permit, the Department reserves the right to require the replacement of that well. Criteria to be used by the Department in judging the adequacy of a well will be related to the ability of the well to provide a representative ground water sample from the portion of the aquifer which the Department requires to be sampled. Any replacement well

must be installed, if possible, within a 10 foot radius of the existing well. Otherwise, the replacement well location must be approved by the Department. Inadequate or damaged existing wells must be properly sealed pursuant to N.J.A.C. 58:4A-4.1. Instructions regarding sealing may be obtained by contacting the Bureau of Water Allocation at (609) 984-6831.

10. As a precaution against cross contamination (in addition to complete decontamination of purging and sampling equipment pursuant to Department requirements), monitoring wells must be sampled, to the extent possible, in order of least to most contaminated unless dedicated purging and sampling equipment are used for all wells.
11. The permittee shall complete the enclosed reporting forms and also "Monitoring Report - Transmittal Sheet" (Form T-VWX-014) which are included as a part of this permit (Appendix G). Permittee must fill out, sign and submit Form T-VWX-014. The signature on Form T-VWX-014 must be an original each time it is submitted. Failure to submit sampling data on the forms required on the "Monitoring Report - Transmittal Sheet" shall be considered by the Department to be a violation of the permit sampling requirements and may subject the permittee to civil and administrative penalties pursuant to N.J.S.A. 58:10A-10. It shall be the permittee's responsibility to maintain an adequate supply of the required report forms.

Discharge Monitoring Report (DMR) forms shall be sent to:

Department of Environmental Protection and Energy  
Wastewater Facilities Regulation Element  
Bureau of Information Systems  
CN-029  
Trenton, NJ 08625

Attention: Discharge Monitoring Reports

Monitoring Well report forms shall be sent to:

Department of Environmental Protection and Energy  
Ground Water Quality Management Element  
Bureau of Aquifer Protection  
CN-029  
Trenton, NJ 08625

Attention: Monitoring Well Reports

12. All samples are to be analyzed by a New Jersey Certified Laboratory. The detection limits to be achieved for inorganic parameters and cyanide shall be less than the ground water protection standards. The laboratory must

follow the Quality Assurance/Quality Control (QA/QC) procedures of the Division of Publicly Funded Site Remediation (DPFSR) QA/QC package. A list of the analytical methodologies used must be retained by the permittee and submitted upon request of the Department. For each reporting period, the permittee shall submit a copy of the laboratory's analysis report, "Monitoring Report-Transmittal Sheet" (Form T-VWX-014), a list of the monitoring wells and the measured ground water elevations, and a report with the applicable items in N.J.A.C. 7:14A-2.5(a)14 to:

Department of Environmental Protection and Energy  
Ground Water Quality Management Element  
Bureau of Ground Water Pollution Abatement  
CN-029  
Trenton, NJ 08625

Attention: Daryl Clark

In addition to the reporting forms referenced above, the permittee shall present analytical results in a summarized, tabular form.

13. Appendix I (Quality Assurance/Quality Control (QA/QC) Package) shall be completed and submitted for each sampling event. This shall include sections A, B, C and the applicable portions of section D.
14. The point of compliance for this permit is the vertical surface located at the hydraulically downgradient extent of the facility's waste management areas. The waste management areas are those areas within an imaginary line circumscribing all regulated units and present or past discharge areas. It shall be assumed that the monitoring wells monitor ground water quality at the point of compliance.
15. The ground water protection standards for the constituents listed in the following tables are (1) the Ground Water Quality Standards, and (2) ground water clean up criteria. These ground water standards are based on the NJPDES Regulations, N.J.A.C. 7:14A-1 et seq., the Hazardous Waste Regulations, N.J.A.C. 7:26-8.16 et seq., and the Ground Water Quality Standards, N.J.A.C. 7:9-6 et seq. These ground water protection standards shall not be construed as effluent limitations which are defined under N.J.S.A. 58:10A-3f of amendments to the New Jersey Water Pollution Control Act.
16. If a ground water protection standard, as defined above, is exceeded for parameters and wells other than those already included in the corrective action program, the permittee must notify the Assistant Director, Ground Water Quality

Management Element, CN-029, Trenton, NJ 08625 in writing by certified mail within seven days of the permittee's receipt of the analytical results.

17. For the Detection Monitoring Program of this permit, within 45 days of the receipt of analytical results that indicate that a ground water protection standard has been exceeded at a compliance point for a second sampling and analysis event, or upon written notification by the Department, the permittee shall submit to the address in Condition 12 for review and approval a compliance monitoring program which, at a minimum, includes the following:

- a) additional sampling and data analysis which clearly indicate whether contamination has entered ground water.
- b) identification, to the extent possible, of all sources of discharges to ground water (e.g. leaking underground tank, damaged surface impoundment, failed septic system, etc.) and plans to immediately remediate or eliminate, to the extent possible, the sources of discharges to ground water within the permittee's control, as they are revealed in the course of investigation;
- c) additional monitoring wells, if necessary, to delineate the horizontal and vertical extent of ground water contamination;
- d) applicable portions of N.J.A.C. 7:14A-6.15(j).
- e) a reasonable timetable for implementation of the plan.

Upon notification by the Department, or upon receipt by the Department of the compliance monitoring program, the Department will recalculate permit fees based on the criteria set forth in N.J.A.C. 7:14A-1.8.

18. If the Department determines that new information justifies additional requirements to the compliance monitoring plan, or the implementation of a revised corrective action program, as defined in N.J.A.C. 7:14A-6.15(k), the Department shall notify the permittee that such a plan is required and will prepare a draft major modification for public notice to include new conditions (cf. N.J.A.C. 7:14A-2.12).
19. The permittee must follow the approved Ground Water Sampling and Analysis Plan (GWSAP), dated November 1990. Lenox shall begin to implement the ground water sampling and analysis plan within 30 days of the effective date of this permit.
20. The permittee shall sample a total of 6 ground water monitor wells, including upgradient well MW-1 and downgradient wells

MW -3, -4, -6, -9, -10 according to the schedule in Table 1 below. These wells are the designated RCRA wells for the glaze basin and the slip basin. All ground water elevations must be determined prior to evacuation and sampling of the wells. Sampling of the wells shall be performed according to the methodology specified in Section 6.12 of the NJPDES regulations and the approved November 1990 Ground Water Sampling and Analysis Plan. A chain of custody record for each sample shall be maintained at the facility and may be requested and/or examined by the Department. The permittee or his/her agent shall evacuate the ground water monitoring wells according to the procedures identified in Section 6.12 of the NJPDES regulations no more than four hours prior to sample collection. These requirements are part of a detection monitoring program.

TABLE 1  
Slip and Glaze Basin Detection Monitoring

<u>PARAMETER</u>	<u>GROUND WATER (6)*</u> <u>PROTECTION</u> <u>STANDARD</u>	<u>SAMPLING</u> <u>MONTH</u>	<u>SAMPLE</u> <u>TYPE</u>	<u>REPORTING</u> <u>MONTH</u>
Elevation of top of monitor well casing (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan
Elevation of original ground level (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from top of casing prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from original ground level prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Ammonia-Nitrogen (5)*	- ppm	FebMayAugNov	grab(1)*	AprJulyOctJan
Color	none	FebMayAugNov	grab	AprJulyOctJan
Lead & Compounds	0.05 ppm	FebMayAugNov	grab	AprJulyOctJan
Zinc & Compounds	5 ppm	FebMayAugNov	grab	AprJulyOctJan
pH (3)*	4-9 SU	FebMayAugNov	grab	AprJulyOctJan
Sodium (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Sulfate (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan

Total Dissolved Solids (TDS) (5)*	-	ppm	FebMayAugNov	grab	AprJulyOctJan
Dissolved Oxygen	-	ppm	FebMayAugNov	grab	AprJulyOctJan

## NOTES:

See the notes at the end of Table 2.

21. The permittee shall sample a total of 9 ground water monitor wells, including MW- 1, -3, -4, -6, -7, -8, -9, -10 and -15 according to the schedule in Table 2 below. Monitoring wells 1, 7, and 8 will be used to monitor the Polishing Basin and Tilton Road Pond and are part of a detection monitoring program. For wells where a parameter in Table 2 corresponds to a parameter in Table 1, only one analysis is required for that parameter during a given sampling month. The requirement to sample and analyze for volatile organic compounds only applies to monitoring wells 1, 3, 6, 9, 10 and 15. Sampling and analysis for total volatile organic compounds will be reported annually, but the Department is establishing ground water protection levels only for trichloroethylene and its breakdown products, which will be sampled and analyzed for quarterly; this is part of a corrective action monitoring program. The piezometer (P5) shall be monitored for water level elevations only, according to the schedule given in Table 2. All ground water elevations must be determined prior to evacuation and sampling of the wells. Sampling procedures will follow those outlined in Conditions 19 and 20 above.
22. The permittee shall perform a statistical analysis of all the parameters listed in Table 2 (Part III-DGW) below except volatile organics for each well. The arithmetic mean and variance of the samples will be calculated and compared with the initial background values of upgradient well MW-1. The Department may eliminate parameters or reduce monitoring frequency for parameters if the permittee can demonstrate a statistical basis for such action. Comparisons must be performed using a statistical test approved by the Department or as specified in N.J.A.C. 7:14A-6.15(i). The statistical analyses will be performed after each sampling period.

**TABLE 2**  
**Sitewide Detection and Corrective Action Monitoring**

<u>PARAMETER</u>	<u>GROUND WATER(6)*</u> <u>PROTECTION</u> <u>STANDARD</u>	<u>SAMPLING</u> <u>MONTH</u>	<u>SAMPLE</u> <u>TYPE</u>	<u>REPORTING</u> <u>MONTH (4)*</u>
Elevation of top of monitor well casing (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan

Elevation of original ground level (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from top of casing prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from original ground level prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Ammonia-Nitrogen (5)*	- ppm	FebMayAugNov	grab(1)*	AprJulyOctJan
Color	none	FebMayAugNov	grab	AprJulyOctJan
Iron (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Lead & Compounds	0.05 ppm	FebMayAugNov	grab	AprJulyOctJan
Manganese (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Zinc	5 ppm	FebMayAugNov	grab	AprJulyOctJan
Odor	none	FebMayAugNov		AprJulyOctJan
pH (3)*	4-9 SU	FebMayAugNov	grab	AprJulyOctJan
Sodium (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Sulfate (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Total Dissolved Solids (TDS) (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Total Organic Carbon (TOC)	- ppm	FebMayAugNov	grab	AprJulyOctJan
Dissolved Oxygen	- ppm	FebMayAugNov	grab	AprJulyOctJan
Total Volatile Organics (by GC/MS) (2)*		Feb	grab	Apr
Trichloroethylene	1 ppb	FebMayAugNov	grab	AprJulyOctJan
1,1-Dichloroethylene	2 ppb	FebMayAugNov	grab	AprJulyOctJan
cis-1,2-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulyOctJan
trans-1,2-Dichloroethylene	100 ppb	FebMayAugNov	grab	AprJulyOctJan
Vinyl chloride	5 ppb	FebMayAugNov	grab	AprJulyOctJan

## NOTES:

(1)\*

"Grab" means an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes.



- (2)\*
- A. The method detection limits specified in 40 CFR Part 136- Methods 624 and/or 502.2 shall be achieved, and the quality assurance and quality control methodologies specified in 40 CFR Part 136 shall be utilized. In the event that a laboratory cannot achieve the required detection limit, the permittee must be able to document why these limits cannot be achieved (e.g. the specific instrument limitations). Alternate quantitation limits are subject to Departmental approval. Any alternate quantitation limit must be the lowest level that can be reliably achieved within the limits of precision and accuracy specified in 40 CFR Part 136. Documentation of these quality assurance and quality control measures, including the results of field, trip and method blanks, must be submitted within 30 days of a written request from the Department.
  - B. After the first round of sampling, permittee may propose another analytical methodology for Departmental approval.
  - C. The standards for these compounds are ground water clean-up criteria. These clean-up criteria must be achieved as described in Part VIII-DGW-I, Corrective Measures Implementation.
- (3)\* The parameter pH is to be field determined.
- (4)\* The data required to be reported by Tables 1 and 2 should be submitted in one combined report package for each reporting month.
- (5)\* Ground water protection standards will not be set for these parameters at this time. Monitoring only is required. For wells 7 and 8, standards could be set in the future following the Department's final decision regarding the report submitted by Lenox entitled "Justification of Alternative Ground-Water Standards for Lenox China". Any such standards would be incorporated into this permit as a major modification pursuant to N.J.A.C. 7:14A-2.12 and N.J.A.C. 7:14A-8.1(a)1. For the RCRA wells listed in Condition 20 above, Lenox must perform the statistical analysis required by Condition 22 above and demonstrate that the concentrations of these parameters are decreasing over the life of this permit.

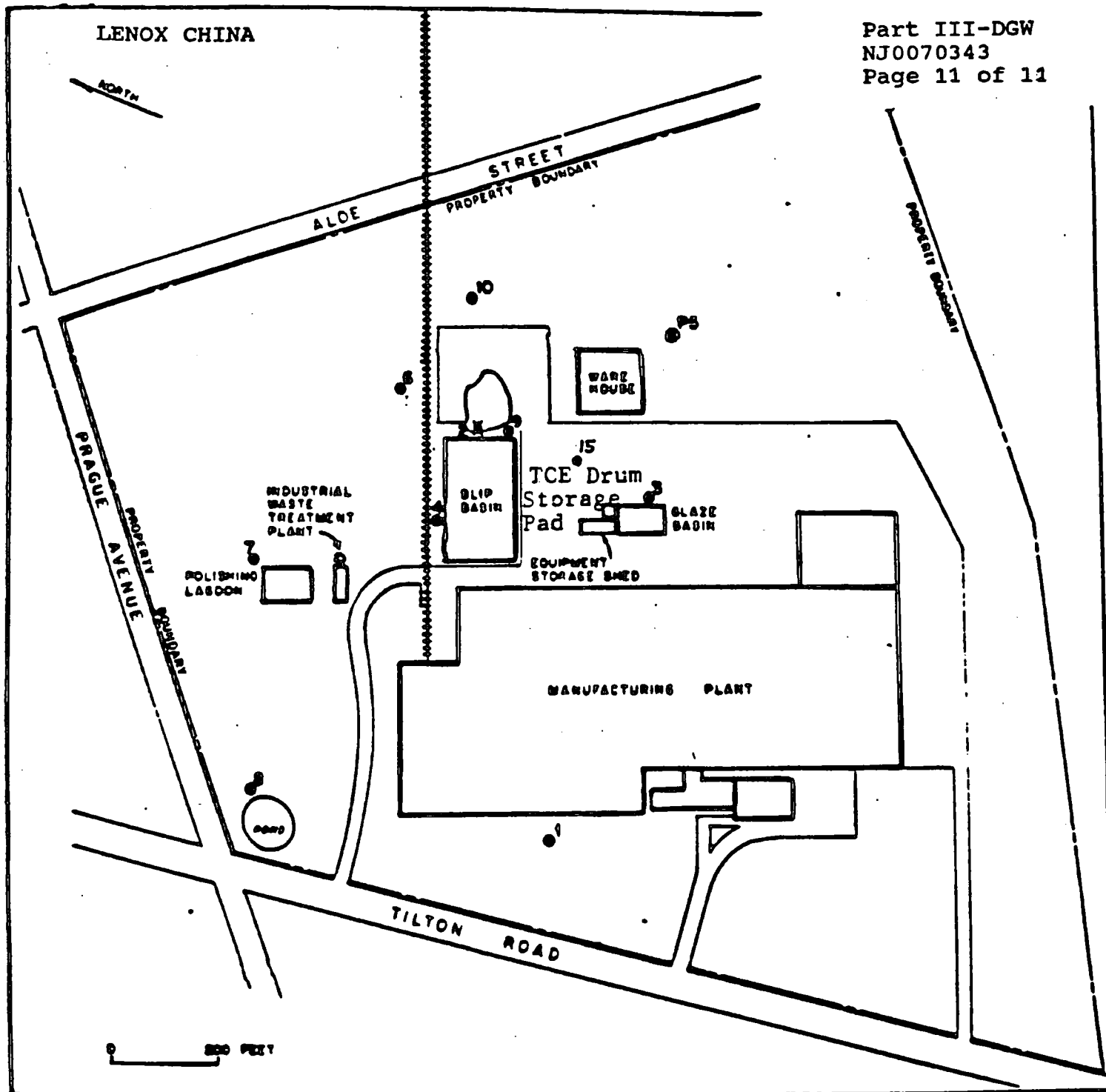
(6)\*

If, subsequent to the effective date of this permit, the Department promulgates clean-up standards different from these standards, the permittee may petition the Department to modify these standards accordingly.

23. The data required to be reported by Tables 1 and 2 should be submitted in one combined report package for each reporting month.
24. Any exceedences for volatile organic compounds (VOCs) from monitoring wells which presently monitor the TCE plume or plumes shall not be violations of the conditions of this permit while remediation of the plume(s) by Lenox is in progress.

LENOX CHINA

Part III-DGW  
NJ0070343  
Page 11 of 11



EXPLANATION

- |                             |                                     |
|-----------------------------|-------------------------------------|
| ● MONITORING WELL           | □ WASTE TREATMENT/<br>STORAGE AREAS |
| ●● PIEZOMETER               |                                     |
| ⊗ ABANDONED MONITORING WELL |                                     |

FIGURE 2  
FACILITY MAP  
Lenox China, Pomona, New Jersey

## WASTEWATER EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Wastewater samples shall be taken from the infiltration/percolation lagoons known as the Polishing Basin and Tilton Road Pond according to the schedule in Table 3 below.
2. All sampling will be performed according to the methodology specified in the Department's Field Procedures Manual for Water Data Acquisition.
3. Effluent Discharge Monitoring Report Forms will be sent from the Department to the Permittee. These forms must be completed for each lagoon and submitted to the address given in Condition Eleven, Part III-DGW, page 3 of 10. A copy of these forms should be sent to the address in Condition Twelve, Part III-DGW, pages 3 and 4 of 10. The form must be submitted at the same time and frequency as the ground water monitoring reports.

TABLE 3

<u>PARAMETER</u>	<u>DISCHARGE LIMITATIONS</u>	<u>SAMPLING MONTH</u>	<u>SAMPLING TYPE</u>	<u>REPORTING MONTH</u>
Temperature, Water	(1)*	FebMayAugNov	grab	AprJulyOctJan
Chemical Oxygen Demand (COD)	(1)*	FebMayAugNov	grab	AprJulyOctJan
pH	5-9 SU	FebMayAugNov	grab	AprJulyOctJan
Total Suspended Solids (TSS)	(1)*	FebMayAugNov	grab	AprJulyOctJan
Nitrate-Nitrogen	10 mg/l	FebMayAugNov	grab	AprJulyOctJan
Phosphorus, Total	(1)*	FebMayAugNov	grab	AprJulyOctJan
Total Organic Carbon (TOC)	(1)*	FebMayAugNov	grab	AprJulyOctJan
Chromium, Total	0.05 mg/l	FebMayAugNov	grab	AprJulyOctJan
Lead, Total	0.05 mg/l	FebMayAugNov	grab	AprJulyOctJan
Manganese	0.05 mg/l	FebMayAugNov	grab	AprJulyOctJan

Flow, in gpd	(1)*	continuous	continuous	Apr	July	Oct	Jan			
Total Dissolved Solids (TDS)	500 mg/l	Feb	May	Aug	Nov	grab	Apr	July	Oct	Jan
Dissolved Oxygen	(1)*	Feb	May	Aug	Nov	grab	Apr	July	Oct	Jan
Specific Conductance	(1)*	Feb	May	Aug	Nov	grab	Apr	July	Oct	Jan
Sodium	50 mg/l	Feb	May	Aug	Nov	grab	Apr	July	Oct	Jan

## NOTES:

(1)\*

Only monitoring is required for the DGW. Limitations may be required by the applicable DSW permit.

4. A Toxicity Characteristic Leaching Procedure (TCLP) or a Department approved replacement for this method must be performed on an annual basis on the sludge within the polishing basin and Tilton Road Pond. The test shall be performed on a composite sample and will include the contaminants listed in N.J.A.C. 7:26-8.12.

## ADDITIONAL GENERAL CONDITIONS FOR INDUSTRIAL DISCHARGES BY INFILTRATION-PERCOLATION LAGOONS

### I. Construction Requirements

#### A. All Infiltration-Percolation Lagoons

1. Any new Infiltration-percolation lagoon(s) shall be designed, constructed, maintained and operated to prevent overtopping and sidewall failure.
2. All lagoons shall be fenced or otherwise have access restricted.

### II. Operation and Maintenance

#### A. General Requirements

1. The permittee shall perform an inspection of all visible portions of the lagoon(s) on at least a monthly basis and after storms to:
  - a. Ensure that the foundation, banks and dikes are structurally sound;
  - b. Detect evidence of any deterioration, malfunctions or other improper operation of the overtopping control system;
  - c. Detect erosion, undermining or other signs of deterioration in dikes, banks, foundations or other containment devices.
2. The permittee must comply with N.J.A.C. 7:14A-2.5(a)12. when reporting noncompliance.
3. Prior to removal and disposal of any sludge from a lagoon, the permittee shall, at his own expense, perform a TCLP (or other tests required by the Department) by a New Jersey certified laboratory. Results shall be sent to the Bureau of Hazardous Waste Regulation Classification and Technical Assistance [phone (609) 292-8341] to determine the classification of the sludge. Based on these results, the permittee shall dispose of the sludge in a manner approved by the Department.
4. If a lagoon is repaired or if it has been inactive (minimum of 6 months), the permittee shall obtain a certification from a New Jersey licensed Professional Engineer that the lagoon will withstand the physical and chemical stresses of the resumed operation.

## B. Contingency Requirements

1. Within six (6) months of the effective date of the permit, the permittee shall develop a worst-case emergency repair plan which shall be submitted for Departmental approval. The plan shall include, at a minimum, provisions for the collapse or overrun of a bank or berm, failure of the foundation, or other reasonably foreseeable events that might necessitate removal of the contents of the lagoon(s). A detailed description shall be given of the methods by which the contents of the lagoon(s) will be emptied and disposed. This plan, upon Department approval, shall be kept at the facility at all times and a copy of the plan will be forwarded to the local township engineer.
2. When a lagoon must be removed from service because of the potential for structural collapse or overtopping, the permittee shall
  - 1) cease all discharges to the lagoon
  - 2) take all necessary steps to prevent any catastrophic failure
  - 3) notify the Department within two hours of discovery by telephone at (609) 292-7172 and
  - 4) give the Department written notification within seven (7) days.
 If the problem cannot be stopped within 24 hours after detection, the applicable portions of the worst-case contingency plan shall be implemented.
3. Any lagoon that has been removed from service in accordance with the requirements of this section may not be restored to service unless the portion of the lagoon which was failing is repaired.
  - a. If the lagoon was removed from service due to actual or imminent bank or sidewall failure, a New Jersey licensed Professional Engineer shall certify the structural integrity of the bank and sidewall prior to the redirection of flow to the lagoon.
  - b. The Department reserves the right to inspect a lagoon at any time during the repairs. If, in the judgment of the Department, the original lagoon system or portions of the system were insufficient or inadequate, the permittee shall install a new upgraded system subsequent to approval by the Department.
  - c. If a lagoon is to be removed from service, the permittee shall submit a closure and post-closure plan to the Department for approval, detailing the steps to be taken to remove and dispose of the contents of the lagoon (if necessary), the schedule for closure, and any post-closure care and monitoring if necessary

C. Closure Requirements

1. The permittee shall, no later than 180 days prior to the expected closure of a lagoon, submit to the Department a Closure/Post-Closure Plan. The plan shall identify all necessary closure and post-closure activities that will be conducted during the closure and post-closure periods. The Department will approve or modify the plan through a major modification pursuant to N.J.A.C. 7:14A-2.12 and 8.1 etc.



## INTERIM REMEDIAL MEASURES

Interim remedial measures must be designed to mitigate environmental problems that pose an imminent threat to human health and/or the environment. Interim remedial measures may also be required by the Department in order to prevent the movement of pollutants off-site from the facility or to mitigate any contamination which may have already moved off-site. Interim remedial measures should be designed to be consistent with and/or integrated into final corrective measures for the facility whenever possible. The Department shall decide if and when interim remedial measures are required in accordance with the requirements of this permit.

### I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. If at any time the Department determines that newly acquired information indicates that contamination from past or present activities at the Permittee's facility poses an imminent threat to human health or the environment and is moving off-site, the Permittee shall be required to implement one or more of the following:
1. Interim remedial measures as directed by the Department to be implemented by the Permittee within a Department specified time frame and consistent with Appendix A, or;
  2. Within 30 calendar days of discovery of the threat to human health and/or the environment or notification from the Department, the Permittee must submit a proposal for interim remedial measures in accordance with Appendix A. The proposal for interim remedial measures will be approved and/or modified by the Department and implemented within a Department specified time frame.

## RCRA FACILITY INVESTIGATION

Pursuant to the intent and specific requirements of the New Jersey Pollutant Discharge Elimination System (NJPDES) regulations N.J.A.C. 7:14A-1.1 et seq. [see 1.1, 1.2, 1.7, 2.1(f), 6.1(a)1-3, 5, 6, (b), and 6.15(d)2], the RCRA Facility Investigation (RFI) must be designed to: characterize the facility; define the sources of contamination; define the degree and extent of contamination; and, identify actual or potential receptors of pollutants at, emanating from, or that have emanated from the facility. Also, the RFI shall result in data of adequate technical quality to support the development and evaluation of the corrective measures alternative(s) during the Corrective Measures Study (CMS) and a Detection Monitoring Program. It is the intent of the Department that this permit be consistent with any federal or state-issued HSWA permit, and this permit is to be interpreted or modified as may be necessary to assure consistency between this permit and any such HSWA permit.

Based on the approved RFI Report, data, information, and recommendations, the Department will determine whether a Corrective Measures Study must be performed to develop and evaluate remedial alternatives for all impacted media. In addition, the RFI Report must recommend which Solid Waste Management Units (SWMUs) or other Areas of Concern (AOC) should be included in the Detection Monitoring Program, or if any Interim Remedial Measures (IRMs) are needed to mitigate any environmental problems that pose an imminent danger to human health or the environment.

The area(s) that should be included in an Interim Remedial Measure, a Corrective Measures Study, and/or a Detection Monitoring Program shall be included in the Department's letter approving the RFI Report. In addition, the Department will issue preliminary clean-up criteria for development of a CMS for each impacted medium as part of this notification. The Department shall develop the preliminary clean-up criteria based on N.J.A.C. 7:14A-6.15, N.J.A.C. 7:9-5 and 6, N.J.A.C. 7:26-1 et seq., available Departmental guidance, and applicable Federal regulations.

Lenox China has already partially completed its RFI and should reference all previously completed reports or work plans in the appropriate documents discussed below and/or in Appendix B or C. Any reports or submissions required herein that the permittee had previously submitted prior to the effective date of this permit need not be submitted again. However, addendums or modifications to such reports could be required if needed to meet permit requirements.

# I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. Within 90 calendar days after the effective date of this permit, the Permittee shall submit to the Department a Facility Background Report in accordance with the requirements set forth in Appendix B.II, attached hereto and made a part hereof. The Department shall review the Report for accuracy and completeness as specified in Appendix B and specific requirements, below, and shall notify the Permittee in writing of any deficiencies or if any additional information is required. The Permittee shall revise the Report to conform to the Department's comments within 60 calendar days of receipt of said comments, and resubmit the report to the Department.
- B. Within 150 calendar days after the effective date of this permit, the Permittee shall submit to the Department a detailed Draft RCRA Facility Investigation Work Plan, (hereinafter the "RFI Work Plan") in accordance with Section III of the scope of work set forth in Appendices B and D, which are attached hereto and made a part hereof. The Permittee must follow the plans developed in accordance with Appendix C (as discussed in the following paragraph) while implementing the RFI Work Plan. In addition, the Draft RFI Work Plan must include all conditions that may be contained in the RFI Specific Requirements section of this part of the permit. The RFI Work Plan may contain separate phases of investigative work.
- C. Within 120 calendar days after the effective date of this permit, the Permittee shall submit to the Department detailed draft versions of the Project Management Plan, the Data Collection Quality Assurance Plan, the Data Management Plan, and the Health and Safety Plan in accordance with the Scope of Work set forth in Appendix C, which is attached hereto and made a part hereof.
- D. Within 60 calendar days after receipt of the Department's written comments on the Draft RFI Work Plan and the supporting Appendix C plans, the Permittee shall modify these draft plans to conform to the Department's comments and shall submit the modified plans to the Department. The determination as to whether or not the modified plans, as resubmitted, conform to the Department's comments shall be made solely by the Department. The Department's comments will be strictly limited to require consistency with the Scope of Work in Appendices B and C, and the specific requirements, listed below. The permittee may request a meeting with the Department within 21 days of receipt of comments to discuss and resolve any questions or issues raised by the Department's comments on the draft work plan. The permittee shall have either 60 days, as stated above, or until 30 days after such meeting to submit the modified plans.

- E. Upon receipt of the Department's written approval of the revised RFI Work Plan and the Appendix C supporting plans, the Permittee shall conduct the RFI in accordance with these approved plans and the schedules therein. The permittee may request a meeting with the Department to discuss and resolve any questions or issues raised while conducting the investigation.
- F. The Permittee shall submit to the Department a draft RCRA Facility Investigation Report (hereinafter "RFI Report") in accordance with the Data Management Plan (Appendix C), Condition IV of Appendix B, and the RFI Work Plan and the schedule therein.
- G. If upon review of the draft RFI Report or at any time after the issuance of this permit the Department determines that additional investigation is required (e.g., new SWMUs or AOCs or new releases at existing SWMUs or AOCs are identified), the Permittee shall conduct additional RFI work as directed by the Department, consistent with Appendix B and submit a second draft RFI Report. The finding of new SWMUs or AOCs must be reported to the Department in writing within 15 calendar days of their discovery. The permittee may request a meeting within 21 days of receipt of the Department's comments to discuss and resolve any questions or issues that are raised by the Department's requirement to conduct additional RFI work.
- H. Within 60 calendar days after receipt of the Department's written comments on the draft or second draft RFI Report (if applicable pursuant to the preceding paragraph), the Permittee must modify the report to conform to the Department's comments and resubmit the modified RFI Report to the Department. The determination as to whether or not the modified or final RFI Report, as resubmitted, conforms to the Department's comments shall be made solely by the Department in writing. The Department's comments will be strictly limited to require consistency with the Scope of Work in Appendices B and C, and the specific requirements, listed below. The permittee may request a meeting with the Department within 21 days of receipt of comments to discuss and resolve any questions or issues raised by the Department's comments on the draft or second draft RFI report. The permittee shall have either the 60 days, as stated above, or until 30 days after such meeting to submit the modified report.

## II. SPECIFIC REQUIREMENTS

These specific conditions are written to supplement Appendix B. Each section below (unless otherwise stated) corresponds to a section of Appendix B and includes additional detailed conditions that must be included in the RFI Work Plan. To the extent that

any requirements herein were previously completed, or any documents or reports required to be submitted were previously submitted, the permittee is not required to reperform such requirements or resubmit such documents or reports.

**A. Requirements of RCRA Facility Investigation (RFI):**

1. As part of the RFI, the permittee must have determined the impact of past and present production and disposal activities on the soil and ground water at the Lenox China facility. The permittee must have proposed sampling plans and/or submitted reports that adequately assessed the nature and extent of contamination (if any) of the following areas of concern where waste and/or products were managed and other discharges to ground water have occurred or provide justification that the areas have not been impacted by past activities. For all SWMUs, the requirements of the RFI as outlined in Appendix B, Part I, must be fulfilled and it must be determined if the units listed below should be included in an Interim Remedial Measure, Corrective Measures Study, Detection Monitoring Program or if further investigation is necessary.

- a. The following Solid Waste Management Units (SWMUs) were identified at the Lenox China Facility.

1. Degreaser Sludge Pit
2. Sludge Disposal Area
3. Waste Pile
4. Polishing Lagoon
5. Tilton Road Pond
6. Underground Effluent Transfer Pipe
7. Equalization Sump
8. Wastewater Treatment Piping
9. Underground Storage Tanks
- \*10. Glaze Basin
- \*11. Slip Basin
- \*12. Drum Storage Area

**NOTE:**

\*  
The glaze basin, slip basin and drum storage area were RCRA regulated units. Both the glaze and slip basins were closed in 1990 and both basins are subject to post-closure requirements. The Drum Storage Area was closed in August of 1990.

- b. The following Area Of Concern (AOC) was identified at the Lenox China Site:

- Area Between Well #10 and Aloe Street

2. The permittee must determine the hydrogeology and background soil and ground water quality at the site.

B. Contents of Facility Background Report

1. The Facility Background Report must, to the best of Lenox China's knowledge, include all activities, past and present, that have or may have caused a release or discharge, such as the production, transport, storage, disposal, treatment, spill and discharge of products and waste, including estimates of volume, location and dates of these activities. The permittee must use Appendix B, Part II as guidance. The Facility Background Report should reference the compendium of reports entitled Supplemental Information Solid Waste Management Units Lenox China, Pomona, New Jersey, dated September 1990 and other previous investigative work as meeting part of the RFI requirements. Specifically, the following items must be included:

- a. The past operating history and procedures for underground storage tanks must be explained.
- b. Lenox must also provide the following information concerning the tanks:

- listing of all tanks
- date tanks were installed
- capacity of the tanks
- tank construction material
- tank contents
- source of tank contents
- dates that tanks were taken out of service
- soil sampling or RI work related to tanks

If such information was previously obtained, the permittee may instead, submit a copy of the relevant documents.

- c. The origin and past operating history of the Waste Pile (SWMU #3) must be determined.
- d. Referencing the trichloroethylene (TCE) investigation and remediation Report and/or providing new information on the sources of TCE contamination.

C. Contents of RCRA Facility Investigation (RFI) Work Plan

1. The permittee must propose the sample locations and amount of samples needed to define the background soil and sediment quality.

- a. Lenox must conduct a soil investigation in those areas where past discharges have occurred and where suspected or potential contamination is possible. These areas are listed below.

1. Degreaser Sludge Pit
2. Waste Pile
3. Polishing Lagoon
4. Tilton Road Pond
5. Underground Effluent Transfer Pipe
6. Equalization Sump
7. Wastewater Treatment Pipe
8. Underground Storage Tanks
9. Drum Storage Area

2. Unless already addressed in the Facility Background Report, a minimum of four soil borings are required at each area listed above. (If appropriate, one boring may serve to help characterize more than one area.) Additional borings will be required if the minimum amount is not sufficient to allow an accurate delineation of the vertical or horizontal extent of contamination.

- a. For the underground storage tanks, effluent transfer pipe and wastewater facility piping, at least one sample should be located in the area of the filling and discharge pipe(s) or opening(s) if the location(s) is/are known. Other samples for the tanks should be at the same depth as the bottom of the tanks.
- b. In accordance with N.J.A.C. 7:26-9.9(e), Lenox should avoid, if possible, disturbing the northern portion of glaze basin cap during the investigation of the waste pile.
- c. Soil borings which are greater than 25 feet deep or which intersect the water table require NJDEPE well permits. After the samples are taken, all holes must be sealed by a licensed New Jersey well driller certified to seal borings.

3. The permittee must conduct an investigation to determine the impact of SMWUs on the ground water and to define background ground water quality and site-wide hydrogeology. Ground water monitoring and sampling points must be capable of accurately defining the horizontal and vertical extent of contamination that may be at the site, emanating from the site and/or emanating from each SWMU.

- a. Ground water samples and/or ground water elevations, as applicable, will be taken from the following onsite wells and piezometers:

Wells MW-1, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9,  
MW-10, MW-15 (samples)

Piezometers P-5, P-18, P-21 (elevations)

- b. Lenox must conduct an investigation to attempt to determine the origin of the zinc which has been detected in Monitoring well #3.
  - c. Lenox shall install one monitoring well. It will be located on the northeastern edge of the property down gradient of the degreaser sump. This well will be screened in the Upper Cohansey aquifer. Monitor well specifications are given in Appendix D.
4. All soil and sludge samples in areas where past discharges have occurred must be analyzed for lead, zinc volatile organic compounds and any other specific hazardous compounds that are known to have been contained within any past discharges. In addition, the permittee must also propose the parameters to be analyzed for that will sufficiently quantify the impact of the discharge(s). The Department will evaluate this proposal in terms of the criteria set forth in N.J.A.C. 7:14A-6.15(d)2i.1-9 and ii.1-10. The permittee will be notified in writing of the Department's decision on the proposed alternate analyses.

Ground water samples will be sampled and analyzed in accordance with Table 2 of the Detection and Corrective Action Ground Water Monitoring Requirements and Standards, Part III-DGW section of this permit. Ground water sampling and analyses for additional parameters may be required based on results of soil and sludge sampling.

D. Contents of RCRA Facility Investigation (RFI) Report

1. Lenox shall prepare a comprehensive analysis and summary of the results derived from the RCRA Facility Investigation, and make recommendations for any additional investigations as required by Appendix B, Section IV.
2. The RFI Report must document that the data produced by the investigation are sufficient in quality and quantity to fully describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support any Interim Remedial Measures, Corrective Measures, and/or Detection Monitoring Program.



## DETECTION MONITORING PROGRAM

The New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Ground Water (DGW) Detection Monitoring Program, developed from the RCRA Facility Investigation (RFI) Report, must be designed to monitor the impact or potential impact of a unit or area on the ground waters of the state of New Jersey over an extended period. A Detection Monitoring Program must also be designed to determine the effectiveness of past or on-going closure or corrective measures, except ground water remediation, and monitor for leaks or failures of hazardous-chemical or waste-containment units. The Permittee is required to propose a Detection Monitoring Program which includes all units or areas which are an actual discharge or pose a potential for discharge to ground water but do not, at this time, have to be included in a ground water remediation program proposed in the CMS or that are not already included in the existing Detecting Monitoring Program of Part III of this permit. Proposed changes to the existing Detection Monitoring Program can also be submitted at this time.

To the extent that any of the following requirements were previously performed by the permittee or documents and reports were previously submitted by the permittee to the Department prior to the effective date of this permit, such tasks need not be repeated and such documents and reports need not be resubmitted. However, if any such documents do not meet the permit requirements, addendums or revisions to the documents will be required. Lenox must identify which previously submitted reports meet permit submittal requirements at the time which these submittal are due.

### I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. Within sixty (60) calendar days following the Department's final approval of the RCRA Facility Investigation (RFI) Report, the Permittee shall submit to the Department a draft Detection Monitoring Program in accordance with the requirements set forth in N.J.A.C. 7:14A-6.15(i) and Appendix E, attached hereto and made part hereof. The Department will review the proposal for completeness and shall notify the Permittee, in writing, of any deficiencies or if additional information is required.
- B. Within thirty (30) calendar days after the receipt of the Department's written comments on the draft Detection Monitoring Program proposal, the Permittee should modify the draft proposal to conform to the Department's comments and submit the final proposal to the Department. The determination as to whether or not the final proposal, as resubmitted, conforms to the Department's comments shall be

made solely by the Department. The Department's comments will strictly be limited to accomplishing compliance with the requirements of N.J.A.C. 7:14A-6.15 and Appendix E.

If the final proposal conforms to the Department's comments and/or qualifies as a minor modification (see N.J.A.C. 7:14A-2.14), the Department will approve and require implementation of the proposal through a letter. If the final proposal does not conform to the Department's comments, the Department may issue a major modification (see N.J.A.C. 7:14A-2.12) of this permit to require implementation of a modified version of the proposal.

## CORRECTIVE MEASURES STUDY

The Permittee has already partially completed the requirements of this part of this permit. As part of the final approval of the RCRA Facility Investigation (RFI) Report, the Department will notify the Permittee, in writing, whether or not an additional Corrective Measures Study (CMS) must be undertaken as a requirement of this permit. The Department will use the results of the RCRA Facility Investigation as the basis for requiring such a Corrective Measures Study and the specific area(s) that need corrective measures. In the Corrective Measures Study, the Permittee must identify, screen, evaluate, and develop the alternative or alternatives capable of removal, containment, and/or other remediation of all significantly (as defined by the Department based on applicable regulations and standards) polluted media. All alternatives must be evaluated based on technical, environmental, human health, and institutional concerns. The Permittee's preferred alternative must be identified and justified and its conceptual design developed. The Corrective Measures Study must also include a proposal for ground water monitoring to determine and/or verify the effectiveness of the preferred alternative. The permittee may petition the Department to impose Alternate Concentration Limits [ACLs] consistent with applicable regulatory requirements.

Based on the results of the approved CMS, the Department shall select a remedial alternative that will (1) be protective of human health and the environment; (2) meet the minimum protection standards that the remedy must achieve in order to be protective of human health and the environment; (3) control the source(s) of the release(s) of contaminants so as to reduce or eliminate further releases that might pose a threat to human health or the environment; and, (4) meet all applicable promulgated waste management standards.

In conformance with N.J.A.C. 7:14A-2.12, the Department shall prepare a Major Modification to this permit requiring the implementation of any selected corrective measure(s) and establishing media protection standards in accordance with applicable regulations. Issuance of the Major Modification of this permit shall follow the procedures outlined under N.J.A.C. 7:14A-7 and 8.

To the extent that any of the requirements in this Part have already been performed by the permittee or any of the documents and reports required in this Part were previously submitted by the Permittee prior to the effective date of this permit, such tasks need not be repeated and such documents or reports need not be resubmitted. However, addendums or modifications to such reports or documents could be required if needed to meet permit requirements.

## I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. Within ninety (90) calendar days after receipt of the Department's written final approval of the RFI Report and determination that some form of corrective action is needed, the Permittee shall submit to the Department a draft Corrective Measures Study Work Plan (hereinafter, "CMS Work Plan") in accordance with the scope of the work set forth in Appendix F which is attached hereto and made a part hereof.
- B. Within thirty (30) calendar days after receipt of the Department's written comments on the draft CMS Work Plan, the Permittee shall modify the draft CMS Work Plan to conform to the Department's comments and shall submit the modified CMS Work Plan to the Department. The determination as to whether or not the modified CMS Work Plan, as resubmitted, conforms to the Department's comments shall be made solely by the Department. The Department's comments shall be strictly limited to require consistency with Appendix F. The permittee, upon receipt of the Department's comments, may, within 14 days, request a meeting with the Department to discuss and resolve any questions or issues raised by the Department's comments on the work plan. The permittee shall have 21 days after such meeting to resubmit the draft work plan.
- C. Upon receipt of the revised CMS Work Plan the Department shall approve and/or modify the Work Plan. This approval and/or approval with modification shall be given in writing. Upon receipt of the Department's written final approval of the CMS Work Plan, the permittee shall conduct the corrective measures study in accordance with the approved CMS Work Plan and the schedule therein. The permittee, upon receipt of the Work Plan approval may, within 21 days, request a meeting with the Department to discuss and resolve any questions or issues raised by the Department's modifications to the work plan. The schedule applicable to such work plan shall be amended to extend the deadlines therein by 30 days following the date of such a meeting.
- D. The Permittee shall submit to the Department a draft Corrective Measures Study Report (hereinafter "CMS Report") in accordance with Condition III of Appendix F and the approved CMS Work Plan and the schedule therein.
- E. Within forty-five (45) calendar days after receipt of the Department's written comments on the draft CMS Report, the Permittee shall modify the draft CMS Report to conform to the Department's comments and shall submit the modified CMS Report to the Department. The determination as to whether or not the modified CMS Report, as resubmitted, conforms to the Department's comments shall be made solely by the Department in writing. Within 21 days, the permittee may request a meeting with the Department to discuss and resolve

any questions or issues raised by the Department's comments, in which case the deadline for the permittee's submittal of the modified Report shall be extended 30 days after the date of such a meeting. The Department's comments will be strictly limited to require consistency with Appendix F.

## II. SPECIFIC CONDITIONS

- A. The permittee has conducted and completed a Corrective Measure Study for the remediation of trichloroethylene (TCE) contaminated ground water at the Lenox China facility in Pomona. The report, dated August 1990, was received and approved by the Department and is entitled "Summary Report of the Investigation of Trichloroethylene in Ground Water and Proposed Ground Water Remedial System". A revised report, dated November 1991 and entitled "Addendum To Summary Report of the Investigation of Trichloroethylene in Ground Water and Proposed Ground Water Remedial System", was submitted to the Department and contains revisions to the TCE ground water remediation system and the TCE ground water monitoring program. The revisions to the design of the TCE ground water remediation system have been approved by the Department. The TCE ground water monitoring program, as stated in the revised November 1991 Summary Report has not been approved. The Department will send a comment letter to the permittee that will address the ground water monitoring program for the TCE contamination. Upon approval of a ground water monitoring program for the TCE contamination, the Department will notify the permittee in writing.

## CORRECTIVE MEASURES IMPLEMENTATION

The "Ground Water Remediation Design Report", dated August 1990, and the revised design report entitled "Addendum to August 1990 Groundwater Remediation Design Report", dated October 1991, in addition to the reports entitled "Groundwater Recharge Pilot Study Report, Lenox China Facility, Pomona, New Jersey" dated August 1991 and "Technical Specifications, Ground Water Remediation System", dated September 1991 are hereby approved by the Department with the following additional conditions and requirements. This ground water corrective action program must comply with the requirements of N.J.A.C. 7:14A-6.15(k) and 5.1 et seq.

The Corrective Measures Plan prepared by Eder Associates entitled "Addendum to August 1990 Groundwater Remediation Design Report" recommends the use of injection trenches as part of the TCE ground water remediation program. The construction and use of injection trenches for this purpose must follow the guidelines for Underground Injection Control (UIC). (See Section X below.)

- I. The applicable list of hazardous constituents and their ground water protection standards are given in Part III-DGW Table 2, pages 7 and 8 of 11. These are the ground water clean-up standards for the remediation of the volatile organics contamination. If subsequent to the effective date of this permit, new or revised clean-up standards are promulgated by the Department, the permittee may petition the Department to modify these standards accordingly.
- II. The point of compliance is defined in Part III-DGW Condition 14, page 4 of 10.
- III. Pursuant to N.J.A.C. 7:14A-6.15(k)5 and 6:
  - A. The compliance period for Lenox's corrective action program extends as long as necessary to achieve compliance with the ground water protection standards for volatile organics listed in Part III-DGW Table 2, pages 7 and 8 of 11;
  - B. Hydraulic controls and recovery of contaminated ground water must be obtained and maintained for the entire plume of contamination exceeding the ground water protection standards established in Part III-DGW, Table 2. Hydraulic control and recovery of ground water may be terminated if concentrations in the ground water are below the ground water protection standards for two consecutive quarterly rounds of sampling for all monitoring wells included in the corrective action program; and

- C. The Compliance Period and corrective action ground water monitoring shall continue until the owner/operator can demonstrate that the ground water protection standards of Part III-DGW, Table 2 have not been exceeded for a period of three years after corrective action measures (i.e. hydraulic control and recovery of ground water) have ceased or that any such exceedence is attributable to offsite or background conditions. If the ground water protection standard is exceeded within this time frame, necessary parts of the corrective action process shall be re-activated unless such exceedence is attributable to offsite or background conditions. In making this demonstration, the ground water protection standards shall be monitored at all corrective action program monitoring wells or as otherwise determined by the Department.
- IV. Effluent samples shall be taken according to the schedule in Table 4. A sample of recovered ground water prior to treatment should be taken annually in order to evaluate treatment system performance and changes in recovered ground water over time. The first sample should be taken in the first quarterly sampling month listed below after the "start up" month for the ground water treatment system. Subsequent annual samples should be taken in May. These samples should be analyzed for the same parameters listed in Table 4. Data from analyses of any additional samples of this type that the permittee takes must be submitted to the Bureau of Ground Water Pollution Abatement (BGWPA) at the same time as the quarterly data is submitted pursuant to N.J.A.C. 7:14A-2.5(a)12vi.
- A. All sampling will be performed according to the methodology specified in the Department's Field Procedures Manual for Water Data Acquisition.
- B. Effluent Discharge Monitoring Report Forms will be sent from the Department to the Permittee. These forms must be completed and submitted to the first address given in Condition Eleven, Part III-DGW, page 3 of 11. Copies of these forms should be sent to the address in Condition Twelve, Part III-DGW, pages 3 and 4 of 11. The forms must be submitted at the same time and frequency as the ground water monitoring reports.
- C. The established limits in Table 4 shall be met at the sampling point following treatment in the granular activated carbon treatment system prior to distribution to the injection system. If the discharge limit is exceeded at any time, injection of treated water shall cease immediately and shall not commence without approval of the Department. Ceasing the discharge shall not be used as a defense against violation of permit discharge concentration limits or completion of the ground water decontamination.

TABLE 4Corrective Measures Effluent Sampling: Injection Trenches

<u>PARAMETER</u>	<u>EFFLUENT LIMITATIONS</u>	<u>SAMPLING MONTH</u>	<u>SAMPLING TYPE</u>	<u>REPORTING MONTH</u>
pH	(1)*	FebMayAugNov	grab	AprJulOctJan
Total Suspended Solids (TSS)	(1)*	FebMayAugNov	grab	AprJulOctJan
Iron	(1)*	FebMayAugNov	grab	AprJulOctJan
Flow, in gpd	(1)*	FebMayAugNov	continuous	AprJulOctJan
Total Dissolved Solids (TDS)	(1)*	FebMayAugNov	grab	AprJulOctJan
Trichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
1,1-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
cis-1,2-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
trans-1,2-Dichloroethylene	100 ppb	FebMayAugNov	grab	AprJulOctJan
Vinyl Chloride	10 ppb	FebMayAugNov	grab	AprJulOctJan

## NOTES:

(1)\*

Monitoring only is required. No DGW limits have been set at this time. Effluent limits could be set in the future if monitoring data indicate it is necessary.

(2)\*

"Grab" means an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes.

V. The permittee shall also submit quarterly, along with Effluent Discharge Monitoring Report forms, a report to the BGWPA including, for each month in the reporting period, total volume of ground water withdrawn, total volume of treated ground water injected and any upsets or malfunctions in the recovery, treatment or injection systems that may have occurred during the months in that quarter.

VI. The permittee shall submit ground water elevation contour maps quarterly for the entire facility based on water levels obtained during quarterly sampling.



- VII. The permittee must submit a report semi-annually which evaluates the effectiveness of the approved corrective action system.
- VIII. If the Department determines that the ground water corrective action system is not capable of meeting the requirements of this permit, the permittee must submit a plan within 45 days of the Departmental notification which must include but is not limited to the following:
- a. The proposed location, depth and construction of the additional wells necessary to meet the permit requirements.
  - b. The rationale for the proposed locations.

All wells required pursuant to this condition must be installed within 60 days of NJDEPE written approval.

- IX. The Corrective Action outlined in the approved plan shall be initiated as soon as is reasonably possible.
- X. The permittee must comply with all applicable requirements of N.J.A.C. 7:14A-5.1. The following program, General Conditions for the Underground Injection Control (UIC) of Class IV wells are specified based on those requirements.

A. Construction Requirements

1. Construction of Injection System

- a) The injection system must be constructed in accordance with the plans submitted.
- b) The area of review for the injection fields shall be determined in accordance with N.J.A.C. 7:14A-5.13(a)1-3. The ground water recovery system must be considered in making this determination.

B. Operation and Maintenance

1. General Requirements

- a) The permittee must obtain a well drilling permit before constructing any well. Applications for well permits can be obtained from:

Water Supply Element  
CN-029  
Trenton, New Jersey 08625

- b) The permittee is required to submit inventory information regarding the well(s) to the

Department when an application is made for a Class IV well drilling permit. This information must consist of the following:

- well drilling permit number
- facility name and location
- name and address of legal contact
- ownership of facility
- owner of property where well is installed
- nature and type of injection well(s)
- operating status of injection well(s)

2. Pursuant to N.J.A.C. 7:14A-5.7(b), the Department required the permittee to obtain this UIC/NJPDES permit for Class IV injection wells. The protection of the underground sources of drinking water require that the injection system be regulated by requirements for corrective action, monitoring and reporting and operation. Pursuant to N.J.A.C. 7:14A-5.9, the following conditions apply:

- a) The permittee does not need to comply with the provisions of the UIC permit if noncompliance is authorized under a temporary emergency permit
- b) The permittee shall retain all monitoring records and all records concerning the nature and composition of injected fluids until five (5) years after completion of any plugging and abandonment procedures.
- c) New injection wells may not commence injection until construction is complete and the permittee has submitted well completion reports and the Department has inspected or otherwise reviewed the new injection wells and finds them in compliance with permit conditions.

#### C. Contingency Requirements

1. Pursuant to N.J.A.C. 7:14A-5.9(a)4, the permittee is required to report to the Department the following conditions within 2 hours:

- a) Any monitoring or other information which indicate that contaminants may endanger a potable supply well.
- b) Any noncompliance with permit conditions or a malfunction of the injection system that may cause contaminated fluid migration to a potable supply well.

2. Pursuant to N.J.A.C. 7:14A-5.9(a)5, the permittee is required to report to the Department the following conditions within 24 hours:
  - a) Any monitoring or information which indicate that a contaminant may cause endangerment to an underground source of drinking water.
  - b) Any noncompliance with permit conditions or a malfunction of the injection system that may cause fluid migration into or between underground sources of drinking water.
3. Pursuant to N.J.A.C. 7:14A-5.4, no UIC authorization will be allowed if a Class IV well causes or allows movement of fluids containing any contaminants into underground sources of drinking water and if the presence of the contaminants may cause a violation of any primary drinking water standards under N.J.A.C. 7:10-5, ground water quality standards under N.J.A.C. 7:9-6 or which may adversely affect the health of humans. If at any time the Department learns that Class IV wells are causing violations as stated above, the Department shall:
  - a) Order the permittee to take such action as is necessary to prevent or stop the violation; and/or
  - b) Take enforcement action.

D. Plugging and Abandonment

1. The permittee shall notify the Department at least 180 days before the conversion or abandonment of the well. Along with this notice, the permittee shall submit a plugging and abandonment plan which will follow the requirements of N.J.S.A 58:4A-4.1 et seq and N.J.A.C. 7:9-9 (sealing of abandoned wells) where applicable.

## SPECIAL CONDITIONS FOR POST-CLOSURE OF THE RCRA REGULATED LAGOONS

## I. Glaze Basin

- A. Post-closure care of the glaze basin has been approved by the Department following completion of the closure of the glaze basin in July 1990. The permittee shall implement the approved post-closure plan entitled "Post-closure Plan - Glaze Basin, Lenox China, Pomona, New Jersey" dated October 1988, with the clarifications and conditions listed below.
- B. In accordance with N.J.A.C. 7:26-9.9(m), Lenox submitted a survey plat to the Department and local zoning authority that details the location and size of the closed area with respect to permanent, surveyed benchmarks. The plat was prepared and certified by a professional land surveyor. This survey plat was received by the Department on May 24, 1990.
- C. In accordance with N.J.A.C. 7:26-9.9 (e), the permittee will not use the portion of the closed glaze basin along the north wall where hazardous waste and residual contaminated subsoil remains in any way which will disturb the integrity and function of the cap and well monitoring systems.
- D. Lenox shall regularly maintain and inspect monthly the paved cap to ensure the structural integrity and make repairs as needed. Inspection of the cap and the well system will be conducted on a monthly basis. The inspection reports will be filed quarterly and will summarize the following information:
1. The condition of the final cap.
  2. The condition of all ground water monitoring equipment.
  3. Any maintenance required during the post-closure period in order to comply with post-closure monitoring.
- E. Ground water sampling, analysis and reporting will follow all applicable guidelines and requirements of Part III-DGW section of this permit entitled Detection and Corrective Action Ground Water Monitoring Requirements and Standards.
- F. Post-closure maintenance and well monitoring shall continue for 30 years after closure. The time period for post-closure care may be shortened or extended by the Department in accordance with N.J.A.C. 7:26-9.9(c).

## II. Slip Basin

- A. Post-closure care of the slip basin has been approved by the Department following the completion of closure of the slip basin in September 1990. The permittee shall implement the approved post-closure plan with the conditions and clarifications listed below.
- B. In accordance with N.J.A.C. 7:26-9.9(e), the permittee may not use any portion of the closed slip basin in any way that will disturb the integrity and function of the cap and ground water monitoring system in this area.
- C. Lenox shall regularly maintain and inspect the final cover to ensure soil erosion control and structural integrity. Lenox will also ensure that the appropriate vegetation for the soil and climate is grown and maintained on the cap on a year round basis. Inspection reports will be filed quarterly and will summarize the following information:
- 1) The integrity of the cap.
  - 2) The condition of the ground water monitoring wells for the closed basin.
  - 3) Any maintenance and repairs required during the post-closure period in order to comply with post-closure care and monitoring.
- D. Ground water sampling, analysis and reporting will follow all applicable guidelines and requirements as listed in the section of this permit entitled Detection and Corrective Action Ground Water Monitoring Requirements and Standards.
- E. Post-closure requirements and well monitoring shall continue for thirty (30) years after closure of the basin. The time period for post-closure may be shortened or extended by the Department in accordance with N.J.A.C. 7:26-9.9(c).



State of New Jersey  
Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation

CN 413  
Trenton, NJ 08625-0413  
Tel. # 609-984-2902  
Fax. # 609-633-2360

Scott A. Weiner  
Commissioner

Anthony J. Farro  
Director

Mr. Stephen F. Lichtenstein  
Lenox Incorporated  
100 Lenox Drive  
Lawrenceville, NJ 08648

1242 - APR 23 1992

Re: Draft NJPDES-DGW RFI Permit and Draft HSWA Permit for Lenox  
China facility, Pomona, Atlantic County

Dear Mr. Lichtenstein:

This letter confirms the telephone conference call you had with Tracy Wagner, Marc Romanell and Daryl Clark of my staff on April 8, 1992. During this conference call, numerous questions and concerns were raised by Lenox regarding the correlation and consistency of the above referenced permits that will be issued jointly by the New Jersey Department of Environmental Protection and Energy (Department) and the United States Environmental Protection Agency (EPA).

One of the specific concerns deals with the Department and the EPA providing comments on reports or documents submitted by Lenox as part of permit requirements. Lenox expressed concern that they could be sent two sets of conflicting comments by the Department and EPA. It was explained that the standard procedure for this situation is for EPA to provide the Department with their comments. Any conflicting comments between the Department and EPA would be resolved at that time. Subsequently, the Department would send Lenox only one set of comments.

Other issues raised by Lenox included EPA's requirement of financial assurance for the TCE remediation system, concerns about whether EPA will approve of the current remediation system now in operation, and concern over the ground water sampling methods specified by EPA.

In response to Lenox's concern about financial assurance, the Department contacted EPA and asked if they would accept the self assurance form for establishing financial assurance for the remedial system. EPA is currently checking into this question and will provide an answer to the Department.

The EPA will have to review the documents and reports pertaining to the design, construction and operation of the TCE remediation system. Last week on April 16, Andy Park of EPA was given copies of the TCE remediation system documents and reports on file at the Department. Previous experience in working with the EPA would indicate that it is unlikely that they would disapprove or reject an operating remedial action system that has been approved by the Department. This would also hold true for ground water sampling methods approved by the Department.

It was also agreed upon during the conference call that the wastewater effluent discharge limits for sodium and TDS in Table 3 of Part III-DGW-I of the Draft NJPDES-DGW permit would be removed. Lenox will only be required to monitor for these two parameters.

If you have any questions or comments regarding this letter, please contact Daryl Clark of my staff at (609) 292-8427.

Sincerely,



Irene Kropp, Chief  
Bureau of Ground Water  
Pollution Abatement

GWQM378

c: Barry Tornick, USEPA-REGION II



State of New Jersey  
Department of Environmental Protection and Energy

Division of Publicly Funded Site Remediation

CN 413

Trenton, NJ 08625-0413

Tel. # 609-984-2902

Fax. # 609-633-2360

Scott A. Weiner  
Commissioner

Anthony J. Farro  
Director

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

Mr. Stephen F. Lichtenstein  
Lenox Inc.  
100 Lenox Drive  
Lawrenceville, NJ 08648-2394

MAY 04 1992

Re: Issuance of Draft Major Modification of NJPDES-DGW Permit  
No. NJ0070343 For Lenox China, Pomona, Atlantic County.

Dear Mr. Lichtenstein:

Enclosed is a draft major modification of the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Ground Water Permit issued pursuant to N.J.A.C. 7:14A-1 et seq.

The purpose of this draft permit is to implement a RCRA Facility Investigation (RFI), post-closure of two surface impoundments known as the glaze basin and the slip basin, corrective action for remediation of trichloroethylene (TCE) in the ground water, regulation of two non-hazardous infiltration-percolation lagoons known as the polishing basin and Tilton Road Pond and to monitor ground water quality at the facility.

The remediation of TCE contamination at the facility (as specified in Part VIII-DGW-I), and ground water monitoring requirements (as specified in Part III-DGW), has been implemented through the issuance of NJPDES DGW Emergency Permit No. NJ0086487 in accordance with N.J.A.C. 7:14A-2.2.

This draft NJPDES permit is being issued concurrently with the United States Environmental Protection Agency (USEPA)-Region II's draft Hazardous and Solid Waste Amendments (HSWA) permit. The HSWA permit is issued under the authority of the Resource Conservation and Recovery Act (RCRA), (42 U.S.C. Section 6901 et seq.) as amended by the Hazardous and Solid Waste Amendments of 1984.

The appearance of the public notice in your local newspaper marks the commencement of the 45 day public comment period required



Stephen F. Lichtenstein

under N.J.A.C. 7:14A-8.1 of the NJPDES regulations. During this time frame, both the permittee and concerned citizens may offer comments regarding the terms and conditions of the draft NJPDES permit and the draft HSWA permit.

All comments on the draft NJPDES permit must be submitted within the appropriate time frame in writing to:

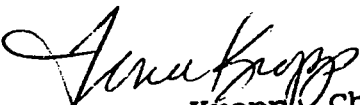
Assistant Director  
Ground Water Quality Management Element  
Division of Publicly Funded Site Remediation  
New Jersey Department of Environmental Protection and Energy  
CN-029  
Trenton, New Jersey 08625

All comments on the draft HSWA permit must be submitted within the appropriate time frame in writing to:

United States Environmental Protection Agency  
Region II  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278

If you have any questions regarding the draft NJPDES permit, please contact Daryl Clark of my staff at (609) 292-8427. If you have any questions regarding the draft HSWA permit, please contact Andrew Park of USEPA-Region II at (212) 264-8684.

Sincerely,

  
Irene Kropp, Chief  
Bureau of Ground Water  
Pollution Abatement

Enclosures  
GWQM378

PUBLIC NOTICE AND STATEMENT OF BASIS  
OF INTENT TO ISSUE A MAJOR MODIFICATION TO AN EXISTING  
NJPDES/GROUND WATER MONITORING PERMIT  
ISSUED UNDER THE NEW JERSEY WATER POLLUTION CONTROL ACT AND THE  
NEW JERSEY SOLID WASTE MANAGEMENT ACT AND THE RULES PROMULGATED  
PURSUANT THERETO AND  
PUBLIC NOTICE OF USEPA'S INTENT TO ISSUE A  
HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984 (HSWA) PERMIT

PROCESSING OFFICE

New Jersey Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation  
Ground Water Quality Management Element  
CN-029  
Trenton, New Jersey 08625  
(609) 292-8427

United States Environmental Protection Agency, Region II  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278  
(212) 264-9539

NAME AND ADDRESS OF APPLICANT

Lenox Inc.  
100 Lenox Drive  
Lawrenceville, New Jersey 08648

NAME AND LOCATION OF FACILITY

Lenox China, a division of Lenox Incorporated  
Tilton Road  
Pomona, New Jersey 08240  
Atlantic County

NJPDES NUMBER: NJ0070343

EPA I.D. NUMBER: NJD002325074

DESCRIPTION OF FACILITY

Lenox China, a division of Lenox Incorporated, is located in a rural area on the outskirts of the Town of Pomona in

southeastern New Jersey. The facility manufactures ceramic dinnerware. The manufacturing process includes the progressive dewatering of clay solution (slip) to form the shape of the ceramic pieces. The pieces are then kiln fired, coated with a leaded glaze mixture, and then refired. Process wastes include waste solvent sludge, which is drummed and disposed of off site, clay solution waste (slip) and glaze waste (fritted lead compounds).

#### DESCRIPTION OF PERMITS

The New Jersey Department of Environmental Protection and Energy (NJDEPE) intends to issue a New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) Permit for the purpose of:

- a. Monitoring ground water quality at the site.
- b. Regulating operation of the two infiltration/percolation lagoons known as the Polishing Basin and Tilton Road Pond.
- c. Investigating waste management areas at the facility and determining the nature and extent of contamination that may have been caused by any past or current discharges.
- d. Developing and implementing any necessary interim remedial measures at any time during the investigation.
- e. Determining and evaluating the nature, source and extent of trichloroethylene (TCE) contamination at the site.
- f. Developing and implementing the necessary corrective measures to remediate TCE contamination.
- g. Implementing post-closure of the RCRA regulated surface impoundments known as the slip basin and the glaze basin.

This notice is being given to inform the public that the NJDEPE has prepared a draft NJPDES permit that is in accordance with the provisions of the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and its implementing regulations (N.J.A.C. 7:14A-1 et seq.).

It is the intent of the Department that this permit be consistent with any federal or state-issued HSWA permit, and this permit is to be interpreted or modified as may be necessary to assure consistency between this permit and any such HSWA permit. However, this permit may contain certain additional requirements not included in the HSWA permit, such as long term ground water or discharge monitoring.

Lenox China is an existing facility and implementation of the NJPDES requirements are the enforcement mechanism by which existing pollutant discharges are brought into conformance and compliance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharge of pollutants and protect the public health and the environment.

This public notice is also being given to inform the public that the United States Environmental Protection Agency has prepared a draft HAZARDOUS AND SOLID WASTE AMENDMENTS (HSWA) PERMIT in accordance with the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984 (42 U.S.C. SS6901 et seq.)

The HSWA permit requires the permittee to:

- a. Determine the nature, extent, direction and rate of migration of hazardous waste, including hazardous constituents, in soils, ground water, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
- b. Certify annually that the generation of hazardous waste is minimized to the extent practicable, and submit and implement a hazardous waste reduction plan;
- c. Comply with land disposal restrictions;
- d. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSWA regulations promulgated on July 21, 1990;
- e. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and
- f. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

#### DESCRIPTION OF DISCHARGE

A documented release of trichloroethylene (TCE) to the ground water has occurred. Investigations conducted by Lenox indicate there are two sources of this contamination. The two sources are a suspected antecedent drum storage pad and degreaser sump. As part of the corrective measures implementation, this permit authorizes a discharge of treated ground water back to the ground via injection trenches.

Twelve (12) Solid Waste Management Units (SWMUs) and one (1) Area of Concern (AOC), have been identified at the Lenox China facility. (Another AOC, an area of stressed vegetation, has since been eliminated as an AOC.)

#### RECEIVING WATERS

The ground waters of the State. The actual and potential discharges are to the Miocene Age Cohansey Sand which is underlain by the Kirkwood Formation.

#### PUBLIC COMMENT PROCEDURES

The 45 day mandatory public comment period shall begin with the publication of this notice. All interested persons may submit written comments on the draft NJPDES-DGW permit to:

Assistant Director  
Ground Water Quality Management Element  
New Jersey Department of Environmental Protection and Energy  
CN-029  
Trenton, New Jersey 08625

All written comments on the draft HSWA permit should be submitted to:

U.S. Environmental Protection Agency, Region II  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
26 Federal Plaza  
New York, New York 10278

All comments shall be submitted within 45 days of the date of this public notice. All persons, including applicants, who believe that any condition of the permits is inappropriate or that the NJDEPE's and EPA's tentative decision to issue these permits as final agency actions is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEPE and EPA with respect to the requirements being applied to this facility. After the close of the public comment period, the NJDEPE and EPA will make a final decision. The NJDEPE and EPA will respond to all significant and timely comments when a final decision is made. The owner or operator and each person who has submitted written comments will receive notice of NJDEPE's and EPA's final decision.

Any interested person may request in writing that NJDEPE and the EPA hold a nonadversarial public hearing on the draft document. This request shall state the nature of the proposed issues to be raised in the hearing and shall be submitted within 45 days of the date of this public notice to NJDEPE, Assistant Director, Ground Water Quality Management Element, and the USEPA, Air and Waste Management Division, Hazardous Waste Facilities Branch at the addresses cited above. A public hearing will be conducted whenever the NJDEPE and EPA determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

After the close of the comment period, the NJDEPE and the EPA will review and consider all comments received, together with a consideration of the requirements of N.J.A.C. 7:26-1 et seq, N.J.A.C. 7:14A-1 et seq and HSWA. The NJDEPE and EPA will make final permit decisions and, if they are substantially unchanged from the proposed decision, will notify all persons who submitted comments or requested notification. If the final permit decision is substantially changed from the proposed decision, the NJDEPE and EPA will issue a public notice of the decision.

All persons are advised that they must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the comment period. In any review of the final permit decision, no issues may be raised that were not submitted to the administrative record unless good cause is shown for the failure to do so.

Copies of this document have been sent to the Mayor, Municipal Clerk, Planning Board, Sewerage Authority, Health Officer, and the Environmental Commission of Galloway Township. Please bring this notice to the attention of all persons who would be interested in this matter.

#### ADMINISTRATIVE RECORD

This public notice is based on the administrative record which is on file at the offices of the NJDEPE, Division of Publicly Funded Site Remediation located at 401 East State Street, City of Trenton, Mercer County, New Jersey. The administrative record for the HSWA permit is on file at the offices of the Permits Administrative Branch, USEPA-Region II, 26 Federal Plaza, New York, New York. The draft permits and all data submitted by the applicant is available as part of the administrative record. The administrative record maintained at NJDEPE and the EPA is available for inspection, by appointment, between 8:30 A.M. and 4:00 P.M., Monday through Friday. Appointments may be scheduled by calling the NJDEPE at (609) 292-0400 and the EPA at (212) 264-9539.

Arnold Schiffman, Assistant Director  
Ground Water Quality Management

## TABLE OF CONTENTS

Permit Page	
Fact Sheet	Page 1 of 5
Figure 1	
General Conditions For All NJPDES-DGW Permits	Part I-DGW Page 1 of 1
Permits And Dispute Resolution	Part II-DGW Page 1 of 2
Detection And Corrective Action Ground Water Monitoring Requirements And Standards	Part III-DGW Page 1 of 11
Waste Water Effluent Limitations And Monitoring Requirements	Part III-DGW-I Page 1 of 2
Additional General Conditions For Industrial Discharges By Infiltration-Percolation Lagoons	Part IV-DGW Page 1 of 3
Interim Remedial Measures	Part V-DGW Page 1 of 1
RCRA Facility Investigation	Part VI-DGW Page 1 of 7
Detection Monitoring Program	Part VII-DGW Page 1 of 2
Corrective Measures Study	Part VIII-DGW Page 1 of 3
Corrective Measures Implementation	Part VIII-DGW-I Page 1 of 6
Special Conditions For Post-Closure Of The RCRA-Regulated Lagoons	Part IX-DGW Page 1 of 2
Permit Appendices:	
Appendix A: Interim Remedial Measures: Scope Of Work	Pages 01 - 03
Appendix B: RCRA Facility Investigation: Scope Of Work	Pages 04 - 25
Appendix C: RFI Supporting Plans: Scope Of Work	Pages 26 - 34

Appendix D: Monitoring Well Specifications  
And Certification Forms

Pages 35 - 41

Appendix E: Detection Monitoring Program

Pages 42 - 50

Appendix F: Corrective Measures Study:  
Scope Of Work

Pages 51 - 57

Ground Water Monitoring Reports  
Transmittal Sheet And Analysis Forms

7 Pages

Quality Assurance/Quality Control  
(QA/QC) Package

44 Pages





# New Jersey Pollutant Discharge Elimination System

# DRAFT

The New Jersey Department of Environmental Protection hereby restricts and controls the discharge of pollutants to waters of the State from the subject facility/activity in accordance with applicable laws and regulations. The permittee is responsible for complying with all terms and conditions of this authorization and agrees to said terms and conditions as a requirement for the construction, installation, modification or operation of any facility for the collection, treatment or discharge of any pollutant to waters of the State.

PERMIT NUMBER NJ0070343

DRAFT

## Permittee

LENOX CHINA INC  
A DIVISION OF LENOX INCORP  
TILTON ROAD  
POMONA NJ 08240

## Co-Permittee

## Property Owner

LENOX INCORPORATED  
100 LENOX DRIVE  
LAWRENCEVILLE NJ 08648

## Location of Activity

LENOX CHINA  
A DIVISION OF LENOX INCORP  
TILTON ROAD  
POMONA NJ 08240

## Current Authorization

Covered By This Approval  
And Previous Authorization

Issuance  
Date

Effective  
Date

Expiration  
Date

I	:INFILT/PERC LAGOON-INDUSTRIAL	00/00/0000	00/00/0000	00/00/0000
K	:UNDERGROUND INJECT(UIC) INDUST	00/00/0000	00/00/0000	00/00/0000

By Authority of:

DEPE AUTHORIZATION

## FACT SHEET

### FOR NJPDES DISCHARGE TO GROUND WATER PERMIT

---

#### NAME AND ADDRESS OF APPLICANT:

Lenox, Inc.  
100 Lenox Drive  
Lawrenceville, NJ 08648

#### NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Lenox China, a division of Lenox Incorporated  
Tilton Road  
Atlantic County  
Pomona, New Jersey 08240

#### DESCRIPTION OF FACILITY:

Lenox China, a division of Lenox Incorporated, is located in a rural area on the outskirts of the Town of Pomona in southeastern New Jersey. The facility had manufactured ceramic dinnerware and giftware, but now only manufactures dinnerware. The manufacturing process includes the progressive dewatering of clay solution (slip) to form the shape of the ceramic pieces. The pieces are then kiln fired, coated with a leaded glaze mixture, and then refired. Process wastes include waste solvent sludge, which is drummed and taken off site for incineration, clay solution waste (slip) and glaze waste (fritted lead compounds).

#### RECEIVING WATERS/HYDROGEOLOGY:

The ground waters of the State. Discharge is to the Miocene Age Cohansey Sand and Kirkwood Formation. The Cohansey Sand consists of irregularly bedded unconsolidated sand and gravel which contain varying percentages of clay and silt. Discontinuous clay layers are also present. Underlying the Cohansey Sand is the Kirkwood Formation, which is made up of dense, diatomaceous clay units and coarse, unconsolidated sands. Three principal aquifers, known as the Upper Cohansey, Lower Cohansey and Lower Kirkwood, underlie the facility and comprise the Cohansey-Kirkwood Aquifer System. Depth to ground water is shallow across the site, ranging from approximately 3 to 10 feet below the ground surface. Ground water flow direction is generally north-northeast.

#### DESCRIPTION OF DISCHARGE:

A documented release of trichloroethylene (TCE) to the ground water has occurred at the Lenox China facility and the

contaminated ground water has migrated offsite of Lenox property. Investigations conducted by Lenox indicate the presence of two TCE plumes which probably originated from two different source areas. The sources of the TCE are believed to be an antecedent degreaser sump and drum storage pad (i.e. both which are no longer in existence). As part of the corrective measures implementation, this permit authorizes a discharge of treated ground water back to the ground via injection trenches.

In addition to the TCE discharge, the potential for additional contamination exists as a result of past and present activities at the Lenox China facility. A total of twelve (12) Solid Waste Management Units (SWMUs) were identified by USEPA as a result of a RCRA Facility Assessment (RFA). The following is a list and description of the SWMUs and Area of Concern (AOC).

#### SWMUs Identified at Lenox China Facility

1) Degreaser Sludge Pit

The degreaser sludge pit is located outside of the northeast portion of the manufacturing building. TCE sludge from a degreaser located inside of the building flows through a pipe and is collected in 30 gallon drums at the pit. This area was near the site of a previous degreaser sludge pit. The former degreaser sludge pit is suspected of being the source of one of the TCE plumes at the site.

2) Sludge Disposal Area

Waste sludge containing lead was dredged from the slip basin and placed in an area northeast of the basin. The sludge disposal area is approximately 200 feet by 200 feet. In 1975, this area was paved with asphalt and is now used as a parking area.

3) Waste Pile

During excavation of the glaze basin in 1988, a seam in the west wall of the basin, approximately 15 feet long and 6 to 12 inches thick, containing a white, clayey material was discovered. The material tested high for lead concentration and has the appearance of glaze waste material. Lenox suspects the material may be the remnants of an antecedent basin used to store glaze waste.

4) Polishing Lagoon

A non-hazardous waste lagoon that is part of the facility waste treatment system is used for temporary storage of non-hazardous wastewater generated by plant activities. It is rectangular and measures approximately 60 feet by 90 feet and has an average depth of 6 feet. The estimated capacity of the basin is 110,000 gallons. The polishing basin received wastewater pumped from the slip basin until use of that basin

was discontinued in 1987. Recent modification of the waste treatment plant allows non-hazardous wastewater to be transferred directly from a Rex Clarifier (a device for settling solids from liquid) to the polishing basin, where further clarification takes place. The basin is periodically dredged to remove accumulations of solids and sludge.

5) Tilton Road Pond

This is a non-hazardous temporary storage lagoon that has an estimated capacity of 125,000 gallons. It receives treated wastewater from the polishing basin and is monitored for biological and chemical quality. Wastewater from the Tilton Road Pond is released into a culvert which runs under Tilton Road and into a storm water ditch. The ditch discharges the wastewater into the Jack Pudding Branch of Babcock Creek.

6) Underground Effluent Transfer Pipe

This unit consists of approximately 200 feet of steel piping that was used to transfer liquid from the glaze basin to the slip basin. Eighty feet of the pipe nearest to the slip basin has been removed.

7) Equalization Sump

Process wastewater from manufacturing areas was directed to this sump prior to treatment. The sump is made of reinforced concrete and its dimensions are approximately 8 feet by 12 feet and 6 feet in depth. It has an estimated capacity of 3,600 gallons. The sump was taken out of service in 1988. It was subsequently used to recycle plaster water. The sump was then cleaned, emptied and removed. The area where the sump was located has been graded and covered with crushed stones.

8) Piping

This includes all piping used in the wastewater treatment facility at Lenox China.

9) Underground Storage Tanks

The underground storage tanks, located behind the main manufacturing building, were removed in July 1987. Although Lenox states that tank removals were performed in accordance with New Jersey regulations and that information regarding tank removal was submitted, the Department has not received such documentation.

10) Glaze Basin

This is a RCRA regulated hazardous waste lagoon which was closed in July 1990 in accordance with applicable regulations. This lagoon was used to store waste glaze material consisting of clay, lead carbonate and lead glass. The total volume of waste deposited in the lagoon was approximately 1,200 cubic yards. During closure, most of the waste was removed, but a small amount of residual waste remains along the bottom and the north sidewall.

11) Slip Basin

This RCRA regulated hazardous waste lagoon was closed in September 1990. This lagoon was used to store clay waste material from 1954 to 1970 and process wastewater containing clay, lead carbonate, frit (low solubility lead compounds in glass form) and silica from 1970 to 1981. From 1981 to 1987, the lagoon received small amounts of process wastewater and was used for surge capacity for the wastewater treatment plant. The total volume of the lagoon was 7,100 cubic yards. The slip basin was closed by raising the waste material above the seasonal high water table, stabilizing the waste material in situ and capping.

12) Drum Storage Area

This RCRA regulated unit consists of an impermeable concrete and asphalt paved area designed to store 30 gallon drums of TCE waste sludge. The storage area drains to a sump pit that is designed to collect spilled material and pump it back into containers. The Drum Storage Area underwent RCRA closure in 1990 and now only stores hazardous waste for less than ninety (90) days. This area is also the site of a previous TCE drum storage area. The previous drum storage area is suspected of being the source of one of the TCE plumes at the Lenox China site.

Area Of Concern (AOC)

1) Area Between Monitoring Well #10 and Aloe Street

This area was not identified in the RFA. Drilling operations at this location revealed the presence of discolored surficial soils. Subsequent investigations conducted by Lenox found that slip waste had been deposited in this area.

DESCRIPTION OF PERMIT

The New Jersey Department of Environmental Protection and Energy (NJDEPE) intends to issue a New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) Permit for the purpose of:

- Monitoring ground water quality at the facility.
- Regulating operation of the two infiltration/percolation lagoons known as the polishing basin and Tilton Road Pond.
- Investigating waste management areas at the facility and determining the nature and extent of contamination caused by any past or current discharges.
- Developing and implementing any necessary interim remedial measures at any time during the investigation.

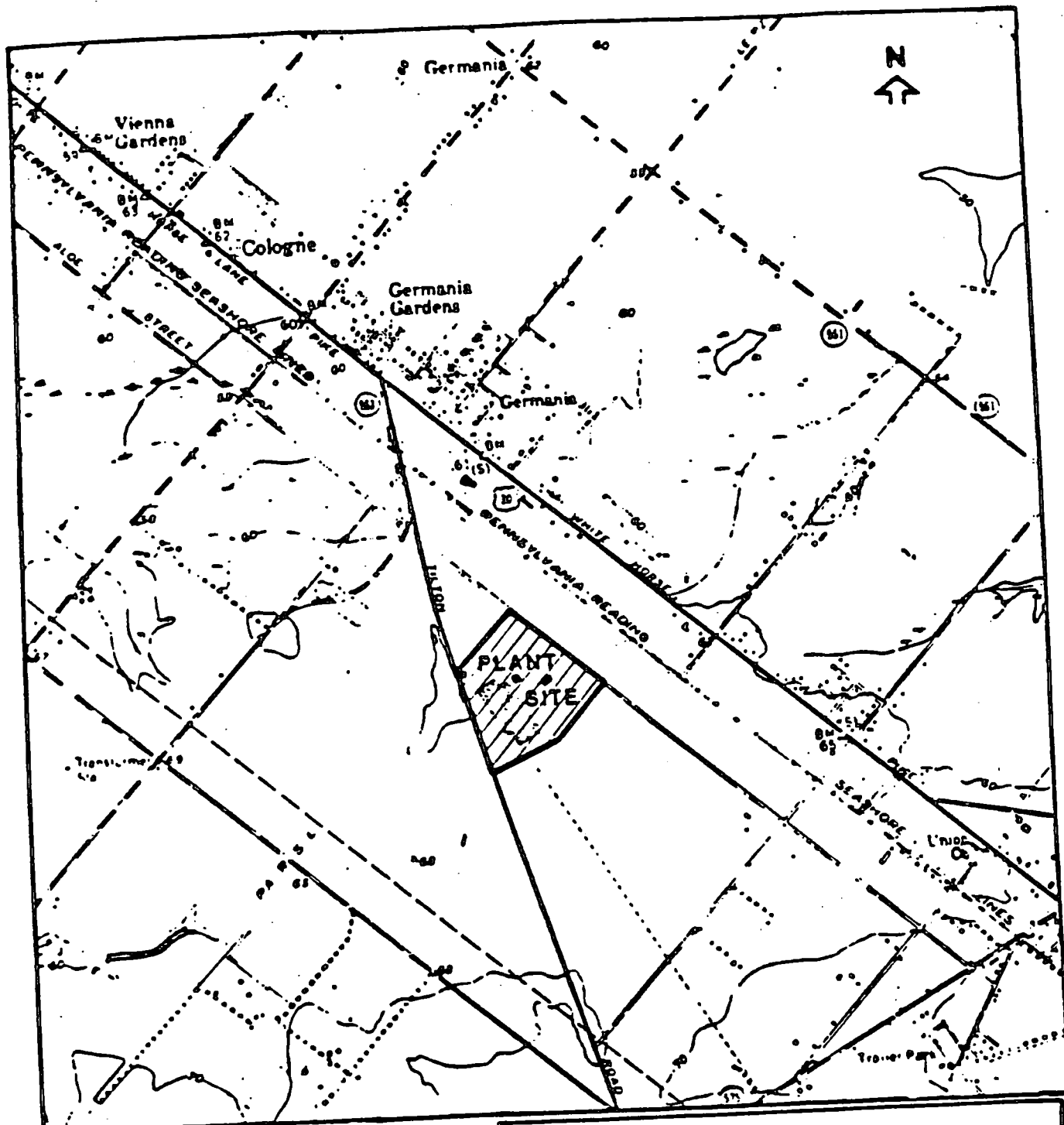
- Determining and evaluating the nature, source and extent of trichloroethylene (TCE) contamination at the site.
- Developing and implementing the necessary corrective measures to remediate the TCE contamination.
- Implementing post-closure of the RCRA regulated surface impoundments known as the slip basin and the glaze basin.

It is the intent of the Department that this permit be consistent with any federal or state-issued HSWA permit, and this permit is to be interpreted or modified as may be necessary to assure consistency between this permit and any such HSWA permit. However, this permit may contain additional requirements not included in the HSWA permit such as long term ground water or discharge monitoring.

Lenox China is an existing facility and implementation of the NJPDES requirements are the enforcement mechanism by which existing pollutant discharges are brought into conformance with laws, regulations and standards. The pollution control requirements are those conditions necessary to restrict the discharges of pollutants and protect the public health and the environment.

#### PERMIT CONDITIONS

The NJPDES-DGW permit has requirements listed in the attached sections regarding General Conditions, Interim Remedial Measures, RCRA Facility Investigation, Detection and Effluent Monitoring Programs, Corrective Measures Study, Corrective Measure Implementation and Post Closure Requirements.



# LOCATION OF LENOX CHINA INC. PLANT SITE

NOT SCALE 1:100

LENOX CHINA INC.  
Pomona, New Jersey

Geraghty  
& Miller, Inc.

DATE: 10-1-60  
BY: E. WERTH  
CHECKED: E. WILSON  
APPROVED: E. WERTH

SCALE: 1:2000  
DATE: DEC. 1962

1

State of New Jersey  
Department of Environmental Protection and Energy  
Division of Publicly Funded Site Remediation

**GENERAL CONDITIONS FOR ALL NJPDES-DGW PERMITS**

The New Jersey Pollutant Discharge Elimination System (NJPDES) regulations (N.J.A.C. 7:14A-1 et seq.) as authorized by the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A et seq.) identify requirements for all Discharge to Ground Water Permits. Information concerning these general permit requirements may be found in the following sections of the NJPDES regulations:

<u>Permit Requirement</u>	<u>Citation</u>
General Information	Subchapter 1
General Requirements for the NJPDES Permit	Subchapter 2
Additional Requirements for an Industrial Waste Management Facility	Subchapter 4
Additional Requirements for Underground Injection Control Program	Subchapter 5
Additional Requirements for Discharges to Ground Water (DGW)	Subchapter 6
Procedures for Decision Making	Subchapter 7
Public Comments and Public Notice	Subchapter 8
Filing Requirements for NJPDES Permits	Subchapter 10
Public Access to Information and Requirements for Departmental Determination of Confidentiality	Subchapter 11



**PERMITS and DISPUTE RESOLUTION**

- A. Within 90 calendar days after the Effective Date of the Permit, or upon becoming subject to applicable permitting requirements, which ever is later, the permittee shall apply for all necessary Federal, State, and local permits or permit renewals in accordance with the requirements of N.J.A.C. 7:14A-1 et seq., N.J.A.C. 7:26-1 et seq., and N.J.A.C. 7:27-8, and other applicable statutes and regulations. Permitted or regulated activities may include, but are not limited to, discharge to surface water bodies; discharge to domestic treatment plants; treatment works approvals; discharges to the air; discharges to lagoons, surface impoundment, cesspools, septic systems, landfills; existing hazardous waste underground storage tanks; land application of contaminated materials, and any activities listed in the specific requirements section of the Interim Remedial Measures part of this permit. For NJPDES permits, a renewal application must be submitted at least 180 days prior to the current permit's expiration date.
- B. The permittee shall submit complete applications for all Federal, State, and local permits required to carry out the obligations of this Permit. An example of such a permit would be a discharge to surface water proposed and approved as part of an interim remedial measure.
- C. This Permit shall not relieve the permittee from obtaining and complying with all applicable statutes and regulations while carrying out the obligations imposed by this permit.
- D. This Permit shall not preclude the Department from requiring that the permittee apply for any permit or permit modification issued by the Department under the authority of the Water Pollution Control Act, N.J.S.A. 58-10A-1 et seq., the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and/or any other statutory authority for the matters covered herein. The terms and conditions of this Permit shall not be pre-empted by the terms and conditions of any such permit that is more stringent than the terms and conditions of this Permit.
- E. The permittee shall use its best efforts to informally and in good faith resolve all disputes or differences of opinion. If however, disputes arise concerning submissions required under this permit, including, but not limited to, implementation of workplans, approval documents, scheduling of any work, selection, performance or completion of any corrective action or any other obligation required under this permit, the permittee shall notify the Bureau of Ground Water Pollution Abatement (BGWPA) immediately of such disputes and within thirty days of notification submit a

written statement to the BGWPA that argues its position. The written argument shall set forth the permittee's specific points of contention; position and reason for its position; and any additional matters that the permittee considers necessary or relevant for the BGWPA's determination. If the dispute cannot be resolved informally within 60 days of receipt of the written argument, the BGWPA will provide the Permittee its decision on the dispute. This decision shall be considered either an existing permit requirement or it shall be incorporated into the permit by either minor or major modification, whichever is appropriate pursuant to specific permit conditions and N.J.A.C. 7:14A-2.12 and 2.14. The permittee may challenge any such modification as provided by N.J.A.C. 7:14A-8.9.

**DETECTION AND CORRECTIVE ACTION  
GROUND WATER MONITORING REQUIREMENTS AND STANDARDS**

1. The locations of existing ground water monitor wells required to be sampled or monitored are shown on Figure 2, Part III-DGW, Page 11 of 11.
2. The permittee shall provide the Bureau of Ground Water Pollution Abatement with a minimum of two weeks notification prior to the installation of any ground water monitor wells at the site.
3. The owner or operator shall inspect each ground water monitor well on a monthly basis for structural integrity and/or damage. The permittee shall maintain a complete inspection record indicating dates of inspection, inspector's name, and conditions observed. These records shall be made available to the Department upon request. Failure to maintain or submit records upon request shall be a violation of the conditions of this permit.
4. The permittee is required to take any and all reasonable steps necessary to protect the structural integrity of monitoring or recovery wells, treatment systems, or any other potentially harmful or easily damaged equipment on the site and to limit public access by constructing fences, barricades, or any other structures or means necessary to restrict access to the equipment. These structures must be maintained to restrict access.
5. On property on which hazardous waste remains after closure, the owner or operator will not use the property in any way which will disturb the integrity of the containment and well monitoring system in accordance with N.J.A.C. 7:26-9.9 (e).
6. If the monitor wells are damaged or are otherwise rendered inadequate for their intended purpose, the Bureau of Ground Water Pollution Abatement shall be notified within five (5) days of discovery in writing indicating:
  - a. Which wells were damaged or rendered inadequate for their intended use.
  - b. The cause and extent of damage or the reason for the inadequacy.
  - c. If the sampling schedule as required in this permit will not be met or if the results of the sampling may be non-representative.
  - d. The date that the well will again be operational. Damaged wells must be replaced or repaired within 60 days after

the damage has occurred, or (for offsite wells which must be replaced) as soon thereafter as all necessary access, permission or authorization to install a new well is obtained. If any of the following situations have occurred, redeveloped or replacement wells must be sampled not prior to 14 days after development but no later than 28 days after installation:

Situation 1: Wells have been damaged in a way that affected the quality of previously taken ground water samples.

Situation 2: Due to damage to a well a regularly scheduled sampling event has been missed.

Note: Wells in situation 1 above that do not have to be redeveloped (only purged) must be sampled within five days of the discovery of the damage. If the next regularly scheduled sampling for the well(s) is within 21 days of the last day that the well(s) should be sampled under 1 or 2 above, only the regular sampling event is required.

e. The next date that the well will be sampled;

A replacement well must meet the construction requirements established by the Department. A valid New Jersey well permit is required prior to the installation of the replacement well. Failure to follow these procedures is a violation of this permit and may subject the permittee to the provisions of N.J.S.A. 58:10A-10.

7. Satisfactory ground water wells are defined in Section 6.13 of the NJPDES regulations and shall be subject to Departmental approval. If ground water monitoring wells do not meet these standards, they must be replaced with new wells meeting Departmental standards.
8. A Ground Water Monitor Well Certification (Forms A and B) shall be completed within 30 days for each existing well and, for each proposed ground water monitor well, within 30 days of the installation of the ground water monitor well. Information for each well must be shown on a separate form.
9. For an existing well, if information required on the Ground Water Monitoring Certification (Forms A and B) cannot be determined or the ground water monitoring well is not adequately constructed to meet the requirements of this permit, the Department reserves the right to require the replacement of that well. Criteria to be used by the Department in judging the adequacy of a well will be related to the ability of the well to provide a representative ground water sample from the portion of the aquifer which the Department requires to be sampled. Any replacement well

must be installed, if possible, within a 10 foot radius of the existing well. Otherwise, the replacement well location must be approved by the Department. Inadequate or damaged existing wells must be properly sealed pursuant to N.J.A.C. 58:4A-4.1. Instructions regarding sealing may be obtained by contacting the Bureau of Water Allocation at (609) 984-6831.

10. As a precaution against cross contamination (in addition to complete decontamination of purging and sampling equipment pursuant to Department requirements), monitoring wells must be sampled, to the extent possible, in order of least to most contaminated unless dedicated purging and sampling equipment are used for all wells.
11. The permittee shall complete the enclosed reporting forms and also "Monitoring Report - Transmittal Sheet" (Form T-VWX-014) which are included as a part of this permit (Appendix G). Permittee must fill out, sign and submit Form T-VWX-014. The signature on Form T-VWX-014 must be an original each time it is submitted. Failure to submit sampling data on the forms required on the "Monitoring Report - Transmittal Sheet" shall be considered by the Department to be a violation of the permit sampling requirements and may subject the permittee to civil and administrative penalties pursuant to N.J.S.A. 58:10A-10. It shall be the permittee's responsibility to maintain an adequate supply of the required report forms.

Discharge Monitoring Report (DMR) forms shall be sent to:

Department of Environmental Protection and Energy  
Wastewater Facilities Regulation Element  
Bureau of Information Systems  
CN-029  
Trenton, NJ 08625

Attention: Discharge Monitoring Reports

Monitoring Well report forms shall be sent to:

Department of Environmental Protection and Energy  
Ground Water Quality Management Element  
Bureau of Aquifer Protection  
CN-029  
Trenton, NJ 08625

Attention: Monitoring Well Reports

12. All samples are to be analyzed by a New Jersey Certified Laboratory. The detection limits to be achieved for inorganic parameters and cyanide shall be less than the ground water protection standards. The laboratory must

follow the Quality Assurance/Quality Control (QA/QC) procedures of the Division of Publicly Funded Site Remediation (DPFSR) QA/QC package. A list of the analytical methodologies used must be retained by the permittee and submitted upon request of the Department. For each reporting period, the permittee shall submit a copy of the laboratory's analysis report, "Monitoring Report-Transmittal Sheet" (Form T-VWX-014), a list of the monitoring wells and the measured ground water elevations, and a report with the applicable items in N.J.A.C. 7:14A-2.5(a)14 to:

Department of Environmental Protection and Energy  
Ground Water Quality Management Element  
Bureau of Ground Water Pollution Abatement  
CN-029  
Trenton, NJ 08625

Attention: Daryl Clark

In addition to the reporting forms referenced above, the permittee shall present analytical results in a summarized, tabular form.

13. Appendix I (Quality Assurance/Quality Control (QA/QC) Package) shall be completed and submitted for each sampling event. This shall include sections A, B, C and the applicable portions of section D.
14. The point of compliance for this permit is the vertical surface located at the hydraulically downgradient extent of the facility's waste management areas. The waste management areas are those areas within an imaginary line circumscribing all regulated units and present or past discharge areas. It shall be assumed that the monitoring wells monitor ground water quality at the point of compliance.
15. The ground water protection standards for the constituents listed in the following tables are (1) the Ground Water Quality Standards, and (2) ground water clean up criteria. These ground water standards are based on the NJPDES Regulations, N.J.A.C. 7:14A-1 et seq., the Hazardous Waste Regulations, N.J.A.C. 7:26-8.16 et seq., and the Ground Water Quality Standards, N.J.A.C. 7:9-6 et seq. These ground water protection standards shall not be construed as effluent limitations which are defined under N.J.S.A. 58:10A-3f of amendments to the New Jersey Water Pollution Control Act.
16. If a ground water protection standard, as defined above, is exceeded for parameters and wells other than those already included in the corrective action program, the permittee must notify the Assistant Director, Ground Water Quality Management Element, CN-029, Trenton, NJ 08625 in writing by

certified mail within seven days of the permittee's receipt of the analytical results.

17. For the Detection Monitoring Program of this permit, within 45 days of the receipt of analytical results that indicate that a ground water protection standard has been exceeded at a compliance point for a second sampling and analysis event, or upon written notification by the Department, the permittee shall submit to the address in Condition 12 for review and approval a compliance monitoring program which, at a minimum, includes the following:

- a) additional sampling and data analysis which clearly indicate whether contamination has entered ground water.
- b) identification, to the extent possible, of all sources of discharges to ground water (e.g. leaking underground tank, damaged surface impoundment, failed septic system, etc.) and plans to immediately remediate or eliminate, to the extent possible, the sources of discharges to ground water within the permittee's control, as they are revealed in the course of investigation;
- c) additional monitoring wells, if necessary, to delineate the horizontal and vertical extent of ground water contamination;
- d) applicable portions of N.J.A.C. 7:14A-6.15(j).
- e) a reasonable timetable for implementation of the plan.

Upon notification by the Department, or upon receipt by the Department of the compliance monitoring program, the Department will recalculate permit fees based on the criteria set forth in N.J.A.C. 7:14A-1.8.

18. If the Department determines that new information justifies additional requirements to the compliance monitoring plan, or the implementation of a revised corrective action program, as defined in N.J.A.C. 7:14A-6.15(k), the Department shall notify the permittee that such a plan is required and will prepare a draft major modification for public notice to include new conditions (cf. N.J.A.C. 7:14A-2.12).
19. The permittee must follow the approved Ground Water Sampling and Analysis Plan (GWSAP), dated November 1990. Lenox shall begin to implement the ground water sampling and analysis plan within 30 days of the effective date of this permit.
20. The permittee shall sample a total of 6 ground water monitor wells, including upgradient well MW-1 and downgradient wells

MW -3, -4, -6, -9, -10 according to the schedule in Table 1 below. These wells are the designated RCRA wells for the glaze basin and the slip basin. All ground water elevations must be determined prior to evacuation and sampling of the wells. Sampling of the wells shall be performed according to the methodology specified in Section 6.12 of the NJPDES regulations and the approved November 1990 Ground Water Sampling and Analysis Plan. A chain of custody record for each sample shall be maintained at the facility and may be requested and/or examined by the Department. The permittee or his/her agent shall evacuate the ground water monitoring wells according to the procedures identified in Section 6.12 of the NJPDES regulations no more than four hours prior to sample collection. These requirements are part of a detection monitoring program.

TABLE 1  
Slip and Glaze Basin Detection Monitoring

<u>PARAMETER</u>	<u>GROUND WATER (6) *</u> <u>PROTECTION</u> <u>STANDARD</u>	<u>SAMPLING</u> <u>MONTH</u>	<u>SAMPLE</u> <u>TYPE</u>	<u>REPORTING</u> <u>MONTH</u>
Elevation of top of monitor well casing (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan
Elevation of original ground level (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from top of casing prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from original ground level prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Ammonia-Nitrogen (5) *	- ppm	FebMayAugNov	grab (1) *	AprJulyOctJan
Color	none	FebMayAugNov	grab	AprJulyOctJan
Lead & Compounds	0.05 ppm	FebMayAugNov	grab	AprJulyOctJan
Zinc & Compounds	5 ppm	FebMayAugNov	grab	AprJulyOctJan
pH (3) *	4-9 SU	FebMayAugNov	grab	AprJulyOctJan
Sodium (5) *	- ppm	FebMayAugNov	grab	AprJulyOctJan
Sulfate (5) *	- ppm	FebMayAugNov	grab	AprJulyOctJan



Total Dissolved Solids (TDS) (5)*	-	ppm	FebMayAugNov	grab	AprJulyOctJan
Dissolved Oxygen	-	ppm	FebMayAugNov	grab	AprJulyOctJan

## NOTES:

See the notes at the end of Table 2.

21. The permittee shall sample a total of 9 ground water monitor wells, including MW- 1, -3, -4, -6, -7, -8, -9, -10 and -15 according to the schedule in Table 2 below. Monitoring wells 1, 7, and 8 will be used to monitor the Polishing Basin and Tilton Road Pond and are part of a detection monitoring program. For wells where a parameter in Table 2 corresponds to a parameter in Table 1, only one analysis is required for that parameter during a given sampling month. The requirement to sample and analyze for volatile organic compounds only applies to monitoring wells 1, 3, 6, 9, 10 and 15. Sampling and analysis for total volatile organic compounds will be reported annually, but the Department is establishing ground water protection levels only for trichloroethylene and its breakdown products, which will be sampled and analyzed for quarterly; this is part of a corrective action monitoring program. The piezometer (P5) shall be monitored for water level elevations only, according to the schedule given in Table 2. All ground water elevations must be determined prior to evacuation and sampling of the wells. Sampling procedures will follow those outlined in Conditions 19 and 20 above.
22. The permittee shall perform a statistical analysis of all the parameters listed in Table 2 (Part III-DGW) below except volatile organics for each well. The arithmetic mean and variance of the samples will be calculated and compared with the initial background values of upgradient well MW-1. The Department may eliminate parameters or reduce monitoring frequency for parameters if the permittee can demonstrate a statistical basis for such action. Comparisons must be performed using a statistical test approved by the Department or as specified in N.J.A.C. 7:14A-6.15(i). The statistical analyses will be performed after each sampling period.

TABLE 2  
Sitewide Detection and Corrective Action Monitoring

<u>PARAMETER</u>	<u>GROUND WATER(6)*</u> <u>PROTECTION</u> <u>STANDARD</u>	<u>SAMPLING</u> <u>MONTH</u>	<u>SAMPLE</u> <u>TYPE</u>	<u>REPORTING</u> <u>MONTH (4)*</u>
Elevation of top of monitor well casing (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan

Elevation of original ground level (to be determined once but reported as indicated)		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from top of casing prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Depth to Water Table from original ground level prior to sampling		FebMayAugNov	N/A	AprJulyOctJan
Ammonia-Nitrogen (5)*	- ppm	FebMayAugNov	grab(1)*	AprJulyOctJan
Color	none	FebMayAugNov	grab	AprJulyOctJan
Iron (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Lead & Compounds	0.05 ppm	FebMayAugNov	grab	AprJulyOctJan
Manganese (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Zinc	5 ppm	FebMayAugNov	grab	AprJulyOctJan
pH (3)*	4-9 SU	FebMayAugNov	grab	AprJulyOctJan
Sodium (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Sulfate (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Total Dissolved Solids (TDS) (5)*	- ppm	FebMayAugNov	grab	AprJulyOctJan
Total Organic Carbon (TOC)	- ppm	FebMayAugNov	grab	AprJulyOctJan
Dissolved Oxygen	- ppm	FebMayAugNov	grab	AprJulyOctJan
Total Volatile Organics (by GC/MS) (2)*		Feb	grab	Apr
Trichloroethylene	1 ppb	FebMayAugNov	grab	AprJulyOctJan
1,1-Dichloroethylene	2 ppb	FebMayAugNov	grab	AprJulyOctJan
cis-1,2-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulyOctJan
trans-1,2-Dichloroethylene	100 ppb	FebMayAugNov	grab	AprJulyOctJan
Vinyl chloride	5 ppb	FebMayAugNov	grab	AprJulyOctJan

## NOTES:

(1)\*

"Grab" means an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes.

(2)\*

A. The method detection limits specified in 40 CFR Part

136- Methods 624 and/or 502.2 shall be achieved, and the quality assurance and quality control methodologies specified in 40 CFR Part 136 shall be utilized. In the event that a laboratory cannot achieve the required detection limit, the permittee must be able to document why these limits cannot be achieved (e.g. the specific instrument limitations). Alternate quantitation limits are subject to Departmental approval. Any alternate quantitation limit must be the lowest level that can be reliably achieved within the limits of precision and accuracy specified in 40 CFR Part 136. Documentation of these quality assurance and quality control measures, including the results of field, trip and method blanks, must be submitted within 30 days of a written request from the Department.

- B. After the first round of sampling, permittee may propose another analytical methodology for Departmental approval.
- C. The standards for these compounds are ground water clean-up criteria. These clean-up criteria must be achieved as described in Part VIII-DGW-I, Corrective Measures Implementation.

(3)\*

The parameter pH is to be field determined.

(4)\*

The data required to be reported by Tables 1 and 2 should be submitted in one combined report package for each reporting month.

(5)\*

Ground water protection standards will not be set for these parameters at this time. Monitoring only is required. For wells 7 and 8, standards could be set in the future following the Department's final decision regarding the report submitted by Lenox entitled "Justification of Alternative Ground-Water Standards for Lenox China". Any such standards would be incorporated into this permit as a major modification pursuant to N.J.A.C. 7:14A-2.12 and N.J.A.C. 7:14A-8.1(a)1. For the RCRA wells listed in Condition 20 above, Lenox must perform the statistical analysis required by Condition 22 above and demonstrate that the concentrations of these parameters are decreasing over the life of this permit.

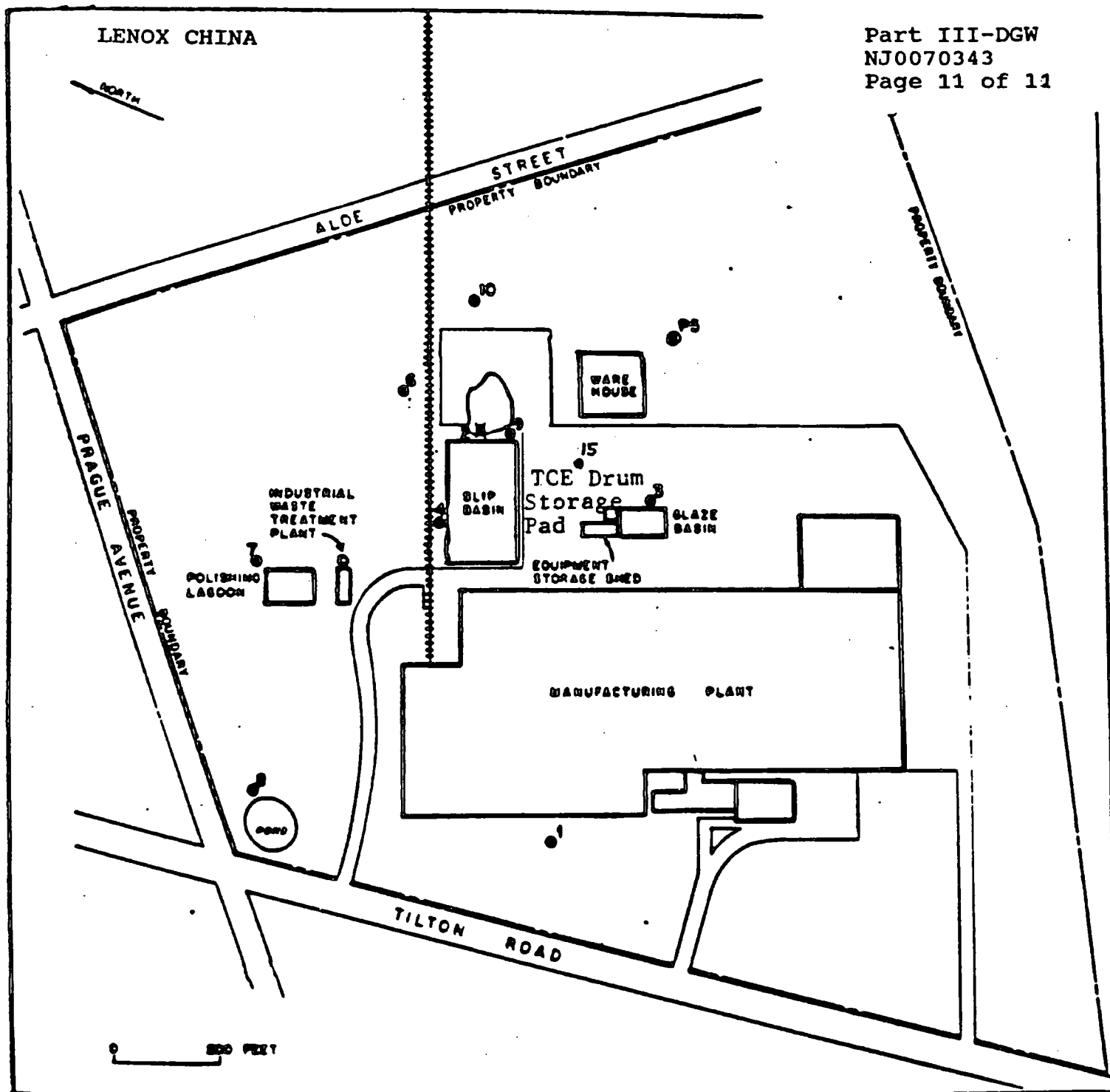
(6)\*

If, subsequent to the effective date of this permit, the Department promulgates clean-up standards different from these standards, the permittee may petition the Department to modify these standards accordingly.

23. The data required to be reported by Tables 1 and 2 should be submitted in one combined report package for each reporting month.
24. Any exceedences for volatile organic compounds (VOCs) from monitoring wells which presently monitor the TCE plume or plumes shall not be violations of the conditions of this permit while remediation of the plume(s) by Lenox is in progress.

LENOX CHINA

Part III-DGW  
NJ0070343  
Page 11 of 11



EXPLANATION

- |                             |                                     |
|-----------------------------|-------------------------------------|
| ● MONITORING WELL           | □ WASTE TREATMENT/<br>STORAGE AREAS |
| ● PIEZOMETER                |                                     |
| ■ ABANDONED MONITORING WELL |                                     |

FIGURE 2  
FACILITY MAP  
Lenox China, Pomona, New Jersey

**WASTEWATER EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. Wastewater samples shall be taken from the infiltration/percolation lagoons known as the Polishing Basin and Tilton Road Pond according to the schedule in Table 3 below.
2. All sampling will be performed according to the methodology specified in the Department's Field Procedures Manual for Water Data Acquisition.
3. Effluent Discharge Monitoring Report Forms will be sent from the Department to the Permittee. These forms must be completed for each lagoon and submitted to the address given in Condition Eleven, Part III-DGW, page 3 of 10. A copy of these forms should be sent to the address in Condition Twelve, Part III-DGW, pages 3 and 4 of 10. The form must be submitted at the same time and frequency as the ground water monitoring reports.

TABLE 3

<u>PARAMETER</u>	<u>DISCHARGE LIMITATIONS</u>	<u>SAMPLING MONTH</u>	<u>SAMPLING TYPE</u>	<u>REPORTING MONTH</u>
Temperature, Water	(1)*	FebMayAugNov	grab	AprJulyOctJan
Chemical Oxygen Demand (COD)	(1)*	FebMayAugNov	grab	AprJulyOctJan
pH	5-9 SU	FebMayAugNov	grab	AprJulyOctJan
Total Suspended Solids (TSS)	(1)*	FebMayAugNov	grab	AprJulyOctJan
Nitrate-Nitrogen	10 mg/l	FebMayAugNov	grab	AprJulyOctJan
Phosphorus, Total	(1)*	FebMayAugNov	grab	AprJulyOctJan
Total Organic Carbon (TOC)	(1)*	FebMayAugNov	grab	AprJulyOctJan
Chromium, Total	0.05 mg/l	FebMayAugNov	grab	AprJulyOctJan
Lead, Total	0.05 mg/l	FebMayAugNov	grab	AprJulyOctJan
Manganese	0.05 mg/l	FebMayAugNov	grab	AprJulyOctJan

Flow, in gpd	(1)*	continuous	continuous	AprJulyOctJan
Total Dissolved Solids (TDS)	(1)*	FebMayAugNov	grab	AprJulyOctJan
Dissolved Oxygen	(1)*	FebMayAugNov	grab	AprJulyOctJan
Specific Conductance	(1)*	FebMayAugNov	grab	AprJulyOctJan
Sodium	(1)*	FebMayAugNov	grab	AprJulyOctJan

## NOTES:

(1)\*

Only monitoring is required for the DGW. Limitations may be required by the applicable DSW permit.

4. A Toxicity Characteristic Leaching Procedure (TCLP) or a Department approved replacement for this method must be performed on an annual basis on the sludge within the polishing basin and Tilton Road Pond. The test shall be performed on a composite sample and will include the contaminants listed in N.J.A.C. 7:26-8.12.

## ADDITIONAL GENERAL CONDITIONS FOR INDUSTRIAL DISCHARGES BY INFILTRATION-PERCOLATION LAGOONS

### I. Construction Requirements

#### A. All Infiltration-Percolation Lagoons

1. Any new Infiltration-percolation lagoon(s) shall be designed, constructed, maintained and operated to prevent overtopping and sidewall failure.
2. All lagoons shall be fenced or otherwise have access restricted as a safety precaution.

### II. Operation and Maintenance

#### A. General Requirements

1. The permittee shall perform an inspection of all visible portions of the lagoon(s) on at least a monthly basis and after storms to:
  - a. Ensure that the foundation, banks and dikes are structurally sound;
  - b. Detect evidence of any deterioration, malfunctions or other improper operation of the overtopping control system;
  - c. Detect erosion, undermining or other signs of deterioration in dikes, banks, foundations or other containment devices.
2. The permittee must comply with N.J.A.C. 7:14A-2.5(a)12. when reporting noncompliance.
3. Prior to removal and disposal of any sludge from a lagoon, the permittee shall, at his own expense, perform a TCLP (or other tests required by the Department) by a New Jersey certified laboratory. Results shall be sent to the Bureau of Hazardous Waste Regulation Classification and Technical Assistance [phone (609) 292-8341] to determine the classification of the sludge. Based on these results, the permittee shall dispose of the sludge in a manner approved by the Department.
4. If a lagoon is repaired or if it has been inactive (minimum of 6 months), the permittee shall obtain a certification from a New Jersey licensed Professional Engineer that the lagoon will withstand the physical and chemical stresses of the resumed operation.



## B. Contingency Requirements

1. Within six (6) months of the effective date of the permit, the permittee shall develop a worst-case emergency repair plan which shall be submitted for Departmental approval. The plan shall include, at a minimum, provisions for the collapse or overrun of a bank or berm, failure of the foundation, or other reasonably foreseeable events that might necessitate removal of the contents of the lagoon(s). A detailed description shall be given of the methods by which the contents of the lagoon(s) will be emptied and disposed. This plan, upon Department approval, shall be kept at the facility at all times and a copy of the plan will be forwarded to the local township engineer.
2. When a lagoon must be removed from service because of the potential for structural collapse or overtopping, the permittee shall 1) cease all discharges to the lagoon 2) take all necessary steps to prevent any catastrophic failure 3) notify the Department within two hours of discovery by telephone at (609) 292-7172 and 4) give the Department written notification within seven (7) days. If the problem cannot be stopped within 24 hours after detection, the applicable portions of the worst-case contingency plan shall be implemented.
3. Any lagoon that has been removed from service in accordance with the requirements of this section may not be restored to service unless the portion of the lagoon which was failing is repaired.
  - a. If the lagoon was removed from service due to actual or imminent bank or sidewall failure, a New Jersey licensed Professional Engineer shall certify the structural integrity of the bank and sidewall prior to the redirection of flow to the lagoon.
  - b. The Department reserves the right to inspect a lagoon at any time during the repairs. If, in the judgment of the Department, the original lagoon system or portions of the system were insufficient or inadequate, the permittee shall install a new upgraded system subsequent to approval by the Department.
  - c. If a lagoon is to be removed from service, the permittee shall submit a closure and post-closure plan to the Department for approval, detailing the steps to be taken to remove and dispose of the contents of the lagoon (if necessary), the schedule for closure, and any post-closure care and monitoring if necessary

C. Closure Requirements

1. The permittee shall, no later than 180 days prior to the expected closure of a lagoon, submit to the Department a Closure/Post-Closure Plan. The plan shall identify all necessary closure and post-closure activities that will be conducted during the closure and post-closure periods. The Department will approve or modify the plan through a major modification pursuant to N.J.A.C. 7:14A-2.12 and 8.1 etc.

**INTERIM REMEDIAL MEASURES**

Interim remedial measures must be designed to mitigate environmental problems that pose an imminent threat to human health and/or the environment. Interim remedial measures may also be required by the Department in order to prevent the movement of pollutants off-site from the facility or to mitigate any contamination which may have already moved off-site. Interim remedial measures should be designed to be consistent with and/or integrated into final corrective measures for the facility whenever possible. The Department shall decide if and when interim remedial measures are required in accordance with the requirements of this permit.

**I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS**

- A. If at any time the Department determines that newly acquired information indicates that contamination from past or present activities at the Permittee's facility poses an imminent threat to human health or the environment and is moving off-site, the Permittee shall be required to implement one or more of the following:
1. Interim remedial measures as directed by the Department to be implemented by the Permittee within a Department specified time frame and consistent with Appendix A, or;
  2. Within 30 calendar days of discovery of the threat to human health and/or the environment or notification from the Department, the Permittee must submit a proposal for interim remedial measures in accordance with Appendix A. The proposal for interim remedial measures will be approved and/or modified by the Department and implemented within a Department specified time frame.

**RCRA FACILITY INVESTIGATION**

Pursuant to the intent and specific requirements of the New Jersey Pollutant Discharge Elimination System (NJPDDES) regulations N.J.A.C. 7:14A-1.1 et seq. [see 1.1, 1.2, 1.7, 2.1(f), 6.1(a)1-3,5,6,(b), and 6.15(d)2], the RCRA Facility Investigation (RFI) must be designed to: characterize the facility; define the sources of contamination; define the degree and extent of contamination; and, identify actual or potential receptors of pollutants at, emanating from, or that have emanated from the facility. Also, the RFI shall result in data of adequate technical quality to support the development and evaluation of the corrective measures alternative(s) during the Corrective Measures Study (CMS) and a Detection Monitoring Program. It is the intent of the Department that this permit be consistent with any federal or state-issued HSWA permit, and this permit is to be interpreted or modified as may be necessary to assure consistency between this permit and any such HSWA permit.

Based on the approved RFI Report, data, information, and recommendations, the Department will determine whether a Corrective Measures Study must be performed to develop and evaluate remedial alternatives for all impacted media. In addition, the RFI Report must recommend which Solid Waste Management Units (SWMUs) or other Areas of Concern (AOC) should be included in the Detection Monitoring Program, or if any Interim Remedial Measures (IRMs) are needed to mitigate any environmental problems that pose an imminent danger to human health or the environment.

The area(s) that should be included in an Interim Remedial Measure, a Corrective Measures Study, and/or a Detection Monitoring Program shall be included in the Department's letter approving the RFI Report. In addition, the Department will issue preliminary clean-up criteria for development of a CMS for each impacted medium as part of this notification. The Department shall develop the preliminary clean-up criteria based on N.J.A.C. 7:14A-6.15, N.J.A.C. 7:9-5 and 6, N.J.A.C. 7:26-1 et seq., available Departmental guidance, and applicable Federal regulations.

Lenox China has already partially completed its RFI and should reference all previously completed reports or work plans in the appropriate documents discussed below and/or in Appendix B or C. Any reports or submissions required herein that the permittee had previously submitted prior to the effective date of this permit need not be submitted again. However, addendums or modifications to such reports could be required if needed to meet permit requirements.

**I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS**

- A. Within 90 calendar days after the effective date of this permit, the Permittee shall submit to the Department a Facility Background Report in accordance with the requirements set forth in Appendix B.II, attached hereto and made a part hereof. The Department shall review the Report for accuracy and completeness as specified in Appendix B and specific requirements, below, and shall notify the Permittee in writing of any deficiencies or if any additional information is required. The Permittee shall revise the Report to conform to the Department's comments within 60 calendar days of receipt of said comments, and resubmit the report to the Department.
- B. Within 150 calendar days after the effective date of this permit, the Permittee shall submit to the Department a detailed Draft RCRA Facility Investigation Work Plan, (hereinafter the "RFI Work Plan") in accordance with Section III of the scope of work set forth in Appendices B and D, which are attached hereto and made a part hereof. The Permittee must follow the plans developed in accordance with Appendix C (as discussed in the following paragraph) while implementing the RFI Work Plan. In addition, the Draft RFI Work Plan must include all conditions that may be contained in the RFI Specific Requirements section of this part of the permit. The RFI Work Plan may contain separate phases of investigative work.
- C. Within 120 calendar days after the effective date of this permit, the Permittee shall submit to the Department detailed draft versions of the Project Management Plan, the Data Collection Quality Assurance Plan, the Data Management Plan, and the Health and Safety Plan in accordance with the Scope of Work set forth in Appendix C, which is attached hereto and made a part hereof.
- D. Within 60 calendar days after receipt of the Department's written comments on the Draft RFI Work Plan and the supporting Appendix C plans, the Permittee shall modify these draft plans to conform to the Department's comments and shall submit the modified plans to the Department. The determination as to whether or not the modified plans, as resubmitted, conform to the Department's comments shall be made solely by the Department. The Department's comments will be strictly limited to require consistency with the Scope of Work in Appendices B and C, and the specific requirements, listed below. The permittee may request a meeting with the Department within 21 days of receipt of comments to discuss and resolve any questions or issues raised by the Department's comments on the draft work plan. The permittee shall have the greater of 60 days, as stated above, or 30 days after such meeting to submit the modified plans.

- E. Upon receipt of the Department's written approval of the revised RFI Work Plan and the Appendix C supporting plans, the Permittee shall conduct the RFI in accordance with these approved plans and the schedules therein. The permittee may request a meeting with the Department to discuss and resolve any questions or issues raised while conducting the investigation.
- F. The Permittee shall submit to the Department a draft RCRA Facility Investigation Report (hereinafter "RFI Report") in accordance with the Data Management Plan (Appendix C), Condition IV of Appendix B, and the RFI Work Plan and the schedule therein.
- G. If upon review of the draft RFI Report or at any time after the issuance of this permit the Department determines that additional investigation is required (e.g., new SWMUs or AOCs or new releases at existing SWMUs or AOCs are identified), the Permittee shall conduct additional RFI work as directed by the Department, consistent with Appendix B and submit a second draft RFI Report. The finding of new SWMUs or AOCs must be reported to the Department in writing within 15 calendar days of their discovery. The permittee may request a meeting within 21 days of receipt of the Department's comments to discuss and resolve any questions or issues that are raised by the Department's requirement to conduct additional RFI work.
- H. Within 60 calendar days after receipt of the Department's written comments on the draft or second draft RFI Report (if applicable pursuant to the preceding paragraph), the Permittee must modify the report to conform to the Department's comments and resubmit the modified RFI Report to the Department. The determination as to whether or not the modified or final RFI Report, as resubmitted, conforms to the Department's comments shall be made solely by the Department in writing. The Department's comments will be strictly limited to require consistency with the Scope of Work in Appendices B and C, and the specific requirements, listed below. The permittee may request a meeting with the Department within 21 days of receipt of comments to discuss and resolve any questions or issues raised by the Department's comments on the draft or second draft RFI report. The permittee shall have the greater of 60 days, as stated above, or 30 days after such meeting to submit the modified report.

## II. SPECIFIC REQUIREMENTS

These specific conditions are written to supplement Appendix B. Each section below (unless otherwise stated) corresponds to a section of Appendix B and includes additional detailed conditions that must be included in the RFI Work Plan. To the extent that

any requirements herein were previously completed, or any documents or reports required to be submitted were previously submitted, the permittee is not required to reperform such requirements or resubmit such documents or reports.

A. Requirements of RCRA Facility Investigation (RFI):

1. As part of the RFI, the permittee must have determined the impact of past and present production and disposal activities on the soil and ground water at the Lenox China facility. The permittee must have proposed sampling plans and/or submitted reports that adequately assessed the nature and extent of contamination (if any) of the following areas of concern where waste and/or products were managed and other discharges to ground water have occurred or provide justification that the areas have not been impacted by past activities. For all SWMUs, the requirements of the RFI as outlined in Appendix B, Part I, must be fulfilled and it must be determined if the units listed below should be included in an Interim Remedial Measure, Corrective Measures Study, Detection Monitoring Program or if further investigation is necessary.

- a. The following Solid Waste Management Units (SWMUs) were identified at the Lenox China Facility.

1. Degreaser Sludge Pit
2. Sludge Disposal Area
3. Waste Pile
4. Polishing Lagoon
5. Tilton Road Pond
6. Underground Effluent Transfer Pipe
7. Equalization Sump
8. Wastewater Treatment Piping
9. Underground Storage Tanks
- \*10. Glaze Basin
- \*11. Slip Basin
- \*12. Drum Storage Area

NOTE:

\*

The glaze basin, slip basin and drum storage area were RCRA regulated units. Both the glaze and slip basins were closed in 1990 and both basins are subject to post-closure requirements. The Drum Storage Area was closed in August of 1990.

- b. The following Area Of Concern (AOC) was identified at the Lenox China Site:

- Area Between Well #10 and Aloe Street

2. The permittee must determine the hydrogeology and background soil and ground water quality at the site.

B. Contents of Facility Background Report

1. The Facility Background Report must, to the best of Lenox China's knowledge, include all activities, past and present, that have or may have caused a release or discharge, such as the production, transport, storage, disposal, treatment, spill and discharge of products and waste, including estimates of volume, location and dates of these activities. The permittee must use Appendix B, Part II as guidance. The Facility Background Report should reference the compendium of reports entitled Supplemental Information Solid Waste Management Units Lenox China, Pomona, New Jersey, dated September 1990 and other previous investigative work as meeting part of the RFI requirements. Specifically, the following items must be included:

- a. The past operating history and procedures for underground storage tanks must be explained.
- b. Lenox must also provide the following information concerning the tanks:

- listing of all tanks
- date tanks were installed
- capacity of the tanks
- tank construction material
- tank contents
- source of tank contents
- dates that tanks were taken out of service
- soil sampling or RI work related to tanks

If such information was previously obtained, the permittee may instead, submit a copy of the relevant documents.

- c. The origin and past operating history of the Waste Pile (SWMU #3) must be determined.
- d. Referencing the trichloroethylene (TCE) investigation and remediation Report and/or providing new information on the sources of TCE contamination.

C. Contents of RCRA Facility Investigation (RFI) Work Plan

1. The permittee must propose the sample locations and amount of samples needed to define the background soil and sediment quality.



- a. Lenox must conduct a soil investigation in those areas where past discharges have occurred and where suspected or potential contamination is possible. These areas are listed below.
  1. Degreaser Sludge Pit
  2. Waste Pile
  3. Polishing Lagoon
  4. Tilton Road Pond
  5. Underground Effluent Transfer Pipe
  6. Equalization Sump
  7. Wastewater Treatment Pipe
  8. Underground Storage Tanks
  9. Drum Storage Area
2. Unless already addressed in the Facility Background Report, a minimum of four soil borings are required at each area listed above. (If appropriate, one boring may serve to help characterize more than one area.) Additional borings will be required if the minimum amount is not sufficient to allow an accurate delineation of the vertical or horizontal extent of contamination.
  - a. For the underground storage tanks, effluent transfer pipe and wastewater facility piping, at least one sample should be located in the area of the filling and discharge pipe(s) or opening(s) if the location(s) is/are known. Other samples for the tanks should be at the same depth as the bottom of the tanks.
  - b. In accordance with N.J.A.C. 7:26-9.9(e), Lenox should avoid, if possible, disturbing the northern portion of glaze basin cap during the investigation of the waste pile.
  - c. Soil borings which are greater than 25 feet deep or which intersect the water table require NJDEPE well permits. After the samples are taken, all holes must be sealed by a licensed New Jersey well driller certified to seal borings.
3. The permittee must conduct an investigation to determine the impact of SMWUs on the ground water and to define background ground water quality and site-wide hydrogeology. Ground water monitoring and sampling points must be capable of accurately defining the horizontal and vertical extent of contamination that may be at the site, emanating from the site and/or emanating from each SWMU.
  - a. Ground water samples and/or ground water elevations, as applicable, will be taken from the following onsite wells and piezometers:

Wells MW-1, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9,  
MW-10, MW-15 (samples)

Piezometers P-5, P-18, P-21 (elevations)

- b. Lenox must conduct an investigation to attempt to determine the origin of the zinc which has been detected in Monitoring well #3.
  - c. Lenox shall install one monitoring well. It will be located on the northeastern edge of the property down gradient of the degreaser sump. This well will be screened in the Upper Cohansey aquifer. Monitor well specifications are given in Appendix D.
4. All soil and sludge samples in areas where past discharges have occurred must be analyzed for lead, zinc volatile organic compounds and any other specific hazardous compounds that are known to have been contained within any past discharges. In addition, the permittee must also propose the parameters to be analyzed for that will sufficiently quantify the impact of the discharge(s). The Department will evaluate this proposal in terms of the criteria set forth in N.J.A.C. 7:14A-6.15(d)2i.1-9 and ii.1-10. The permittee will be notified in writing of the Department's decision on the proposed alternate analyses.

Ground water samples will be sampled and analyzed in accordance with Table 2 of the Detection and Corrective Action Ground Water Monitoring Requirements and Standards, Part III-DGW section of this permit. Ground water sampling and analyses for additional parameters may be required based on results of soil and sludge sampling.

D. Contents of RCRA Facility Investigation (RFI) Report

- 1. Lenox shall prepare a comprehensive analysis and summary of the results derived from the RCRA Facility Investigation, and make recommendations for any additional investigations as required by Appendix B, Section IV.
- 2. The RFI Report must document that the data produced by the investigation are sufficient in quality and quantity to fully describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support any Interim Remedial Measures, Corrective Measures, and/or Detection Monitoring Program.

### DETECTION MONITORING PROGRAM

The New Jersey Pollutant Discharge Elimination System (NJPDDES) Discharge to Ground Water (DGW) Detection Monitoring Program, developed from the RCRA Facility Investigation (RFI) Report, must be designed to monitor the impact or potential impact of a unit or area on the ground waters of the state of New Jersey over an extended period. A Detection Monitoring Program must also be designed to determine the effectiveness of past or on-going closure or corrective measures, except ground water remediation, and monitor for leaks or failures of hazardous-chemical or waste-containment units. The Permittee is required to propose a Detection Monitoring Program which includes all units or areas which are an actual discharge or pose a potential for discharge to ground water but do not, at this time, have to be included in a ground water remediation program proposed in the CMS or that are not already included in the existing Detecting Monitoring Program of Part III of this permit. Proposed changes to the existing Detection Monitoring Program can also be submitted at this time.

To the extent that any of the following requirements were previously performed by the permittee or documents and reports were previously submitted by the permittee to the Department prior to the effective date of this permit, such tasks need not be repeated and such documents and reports need not be resubmitted. However, if any such documents do not meet the permit requirements, addendums or revisions to the documents will be required. Lenox must identify which previously submitted reports meet permit submittal requirements at the time which these submittal are due.

#### I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. Within sixty (60) calendar days following the Department's final approval of the RCRA Facility Investigation (RFI) Report, the Permittee shall submit to the Department a draft Detection Monitoring Program in accordance with the requirements set forth in N.J.A.C. 7:14A-6.15(i) and Appendix E, attached hereto and made part hereof. The Department will review the proposal for completeness and shall notify the Permittee, in writing, of any deficiencies or if additional information is required.
- B. Within thirty (30) calendar days after the receipt of the Department's written comments on the draft Detection Monitoring Program proposal, the Permittee should modify the draft proposal to conform to the Department's comments and submit the final proposal to the Department. The determination as to whether or not the final proposal, as resubmitted, conforms to the Department's comments shall be

made solely by the Department. The Department's comments will strictly be limited to accomplishing compliance with the requirements of N.J.A.C. 7:14A-6.15 and Appendix E.

If the final proposal conforms to the Department's comments and/or qualifies as a minor modification (see N.J.A.C. 7:14A-2.14), the Department will approve and require implementation of the proposal through a letter. If the final proposal does not conform to the Department's comments, the Department may issue a major modification (see N.J.A.C. 7:14A-2.12) of this permit to require implementation of a modified version of the proposal.

**CORRECTIVE MEASURES STUDY**

The Permittee has already partially completed the requirements of this part of this permit. As part of the final approval of the RCRA Facility Investigation (RFI) Report, the Department will notify the Permittee, in writing, whether or not an additional Corrective Measures Study (CMS) must be undertaken as a requirement of this permit. The Department will use the results of the RCRA Facility Investigation as the basis for requiring such a Corrective Measures Study and the specific area(s) that need corrective measures. In the Corrective Measures Study, the Permittee must identify, screen, evaluate, and develop the alternative or alternatives capable of removal, containment, and/or other remediation of all significantly (as defined by the Department based on applicable regulations and standards) polluted media. All alternatives must be evaluated based on technical, environmental, human health, and institutional concerns. The Permittee's preferred alternative must be identified and justified and its conceptual design developed. The Corrective Measures Study must also include a proposal for ground water monitoring to determine and/or verify the effectiveness of the preferred alternative. The permittee may petition the Department to impose Alternate Concentration Limits [ACLs] consistent with applicable regulatory requirements.

Based on the results of the approved CMS, the Department shall select a remedial alternative that will (1) be protective of human health and the environment; (2) meet the minimum protection standards that the remedy must achieve in order to be protective of human health and the environment; (3) control the source(s) of the release(s) of contaminants so as to reduce or eliminate, further releases that might pose a threat to human health or the environment; and, (4) meet all applicable promulgated waste management standards.

In conformance with N.J.A.C. 7:14A-2.12, the Department shall prepare a Major Modification to this permit requiring the implementation of any selected corrective measure(s) and establishing media protection standards in accordance with applicable regulations. Issuance of the Major Modification of this permit shall follow the procedures outlined under N.J.A.C. 7:14A-7 and 8.

To the extent that any of the requirements in this Part have already been performed by the permittee or any of the documents and reports required in this Part were previously submitted by the Permittee prior to the effective date of this permit, such tasks need not be repeated and such documents or reports need not be resubmitted. However, addendums or modifications to such reports or documents could be required if needed to meet permit requirements.

## I. SUBMITTAL AND IMPLEMENTATION REQUIREMENTS

- A. Within ninety (90) calendar days after receipt of the Department's written final approval of the RFI Report and determination that some form of corrective action is needed, the Permittee shall submit to the Department a draft Corrective Measures Study Work Plan (hereinafter, "CMS Work Plan") in accordance with the scope of the work set forth in Appendix F which is attached hereto and made a part hereof.
- B. Within thirty (30) calendar days after receipt of the Department's written comments on the draft CMS Work Plan, the Permittee shall modify the draft CMS Work Plan to conform to the Department's comments and shall submit the modified CMS Work Plan to the Department. The determination as to whether or not the modified CMS Work Plan, as resubmitted, conforms to the Department's comments shall be made solely by the Department. The Department's comments shall be strictly limited to require consistency with Appendix F. The permittee, upon receipt of the Department's comments, may, within 14 days, request a meeting with the Department to discuss and resolve any questions or issues raised by the Department's comments on the work plan. The permittee shall have 21 days after such meeting to resubmit the draft work plan.
- C. Upon receipt of the revised CMS Work Plan the Department shall approve and/or modify the Work Plan. This approval and/or approval with modification shall be given in writing. Upon receipt of the Department's written final approval of the CMS Work Plan, the permittee shall conduct the corrective measures study in accordance with the approved CMS Work Plan and the schedule therein. The permittee, upon receipt of the Work Plan approval may, within 21 days, request a meeting with the Department to discuss and resolve any questions or issues raised by the Department's modifications to the work plan. The schedule applicable to such work plan shall be amended to extend the deadlines therein by 30 days following the date of such a meeting.
- D. The Permittee shall submit to the Department a draft Corrective Measures Study Report (hereinafter "CMS Report") in accordance with Condition III of Appendix F and the approved CMS Work Plan and the schedule therein.
- E. Within forty-five (45) calendar days after receipt of the Department's written comments on the draft CMS Report, the Permittee shall modify the draft CMS Report to conform to the Department's comments and shall submit the modified CMS Report to the Department. The determination as to whether or not the modified CMS Report, as resubmitted, conforms to the Department's comments shall be made solely by the Department in writing. Within 21 days, the permittee may request a meeting with the Department to discuss and resolve

any questions or issues raised by the Department's comments, in which case the deadline for the permittee's submittal of the modified Report shall be extended 30 days after the date of such a meeting. The Department's comments will be strictly limited to require consistency with Appendix F.

## II. SPECIFIC CONDITIONS

- A. The permittee has conducted and completed a Corrective Measure Study for the remediation of trichloroethylene (TCE) contaminated ground water at the Lenox China facility in Pomona. The report, dated August 1990, was received and approved by the Department and is entitled "Summary Report of the Investigation of Trichloroethylene in Ground Water and Proposed Ground Water Remedial System". A revised report, dated November 1991 and entitled "Addendum To Summary Report of the Investigation of Trichloroethylene in Ground Water and Proposed Ground Water Remedial System", was submitted to the Department and contains revisions to the TCE ground water remediation system and the TCE ground water monitoring program. The revisions to the design of the TCE ground water remediation system have been approved by the Department. The TCE ground water monitoring program, as stated in the revised November 1991 Summary Report has not been approved. The Department will send a comment letter to the permittee that will address the ground water monitoring program for the TCE contamination. Upon approval of a ground water monitoring program for the TCE contamination, the Department will notify the permittee in writing.

**CORRECTIVE MEASURES IMPLEMENTATION**

The "Ground Water Remediation Design Report", dated August 1990, and the revised design report entitled "Addendum to August 1990 Groundwater Remediation Design Report", dated October 1991, in addition to the reports entitled "Groundwater Recharge Pilot Study Report, Lenox China Facility, Pomona, New Jersey" dated August 1991 and "Technical Specifications, Ground Water Remediation System", dated September 1991 are hereby approved by the Department with the following additional conditions and requirements. This ground water corrective action program must comply with the requirements of N.J.A.C. 7:14A-6.15(k) and 5.1 et seq.

The Corrective Measures Plan prepared by Eder Associates entitled "Addendum to August 1990 Groundwater Remediation Design Report" recommends the use of injection trenches as part of the TCE ground water remediation program. The construction and use of injection trenches for this purpose must follow the guidelines for Underground Injection Control (UIC). (See Section X below.)

- I. The applicable list of hazardous constituents and their ground water protection standards are given in Part III-DGW Table 2, pages 7 and 8 of 11. These are the ground water clean-up standards for the remediation of the volatile organics contamination. If subsequent to the effective date of this permit, new or revised clean-up standards are promulgated by the Department, the permittee may petition the Department to modify these standards accordingly.
- II. The point of compliance is defined in Part III-DGW Condition 14, page 4 of 10.
- III. Pursuant to N.J.A.C. 7:14A-6.15(k)5 and 6:
  - A. The compliance period for Lenox's corrective action program extends as long as necessary to achieve compliance with the ground water protection standards for volatile organics listed in Part III-DGW Table 2, pages 7 and 8 of 11;
  - B. Hydraulic controls and recovery of contaminated ground water must be obtained and maintained for the entire plume of contamination exceeding the ground water protection standards established in Part III-DGW, Table 2. Hydraulic control and recovery of ground water may be terminated if concentrations in the ground water are below the ground water protection standards for two consecutive quarterly rounds of sampling for all monitoring wells included in the corrective action program; and



- C. The Compliance Period and corrective action ground water monitoring shall continue until the owner/operator can demonstrate that the ground water protection standards of Part III-DGW, Table 2 have not been exceeded for a period of three years after corrective action measures (i.e. hydraulic control and recovery of ground water) have ceased or that any such exceedence is attributable to offsite or background conditions. If the ground water protection standard is exceeded within this time frame, necessary parts of the corrective action process shall be re-activated unless such exceedence is attributable to offsite or background conditions. In making this demonstration, the ground water protection standards shall be monitored at all corrective action program monitoring wells or as otherwise determined by the Department.
- IV. Effluent samples shall be taken according to the schedule in Table 4. A sample of recovered ground water prior to treatment should be taken annually in order to evaluate treatment system performance and changes in recovered ground water over time. The first sample should be taken in the first quarterly sampling month listed below after the "start up" month for the ground water treatment system. Subsequent annual samples should be taken in May. These samples should be analyzed for the same parameters listed in Table 4. Data from analyses of any additional samples of this type that the permittee takes must be submitted to the Bureau of Ground Water Pollution Abatement (BGWPA) at the same time as the quarterly data is submitted pursuant to N.J.A.C. 7:14A-2.5(a)12vi.
- A. All sampling will be performed according to the methodology specified in the Department's Field Procedures Manual for Water Data Acquisition.
- B. Effluent Discharge Monitoring Report Forms will be sent from the Department to the Permittee. These forms must be completed and submitted to the first address given in Condition Eleven, Part III-DGW, page 3 of 11. Copies of these forms should be sent to the address in Condition Twelve, Part III-DGW, pages 3 and 4 of 11. The forms must be submitted at the same time and frequency as the ground water monitoring reports.
- C. The established limits in Table 4 shall be met at the sampling point following treatment in the granular activated carbon treatment system prior to distribution to the injection system. If the discharge limit is exceeded at any time, injection of treated water shall cease immediately and shall not commence without approval of the Department. Ceasing the discharge shall not be used as a defense against violation of permit discharge concentration limits or completion of the ground water decontamination.

TABLE 4Corrective Measures Effluent Sampling: Injection Trenches

<u>PARAMETER</u>	<u>EFFLUENT LIMITATIONS</u>	<u>SAMPLING MONTH</u>	<u>SAMPLING TYPE</u>	<u>REPORTING MONTH</u>
pH	(1)*	FebMayAugNov	grab	AprJulOctJan
Total Suspended Solids (TSS)	(1)*	FebMayAugNov	grab	AprJulOctJan
Iron	(1)*	FebMayAugNov	grab	AprJulOctJan
Flow, in gpd	(1)*	FebMayAugNov	continuous	AprJulOctJan
Total Dissolved Solids (TDS)	(1)* <sup>5 ppb</sup>	FebMayAugNov	grab	AprJulOctJan
Trichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
1,1-Dichloroethylene <sup>6</sup>	10 ppb	FebMayAugNov	grab	AprJulOctJan
cis-1,2-Dichloroethylene	10 ppb	FebMayAugNov	grab	AprJulOctJan
trans-1,2-Dichloroethylene	100 ppb	FebMayAugNov	grab	AprJulOctJan
Vinyl Chloride	10 ppb	FebMayAugNov	grab	AprJulOctJan

## NOTES:

(1)\*

Monitoring only is required. No DGW limits have been set at this time. Effluent limits could be set in the future if monitoring data indicate it is necessary.

(2)\*

"Grab" means an individual sample of at least 100 milliliters collected over a period not exceeding 15 minutes.

V. The permittee shall also submit quarterly, along with Effluent Discharge Monitoring Report forms, a report to the BGWPA including, for each month in the reporting period, total volume of ground water withdrawn, total volume of treated ground water injected and any upsets or malfunctions in the recovery, treatment or injection systems that may have occurred during the months in that quarter.

VI. The permittee shall submit ground water elevation contour maps quarterly for the entire facility based on water levels obtained during quarterly sampling.

- VII. The permittee must submit a report semi-annually which evaluates the effectiveness of the approved corrective action system.
- VIII. If the Department determines that the ground water corrective action system is not capable of meeting the requirements of this permit, the permittee must submit a plan within 45 days of the Departmental notification which must include but is not limited to the following:

a. The proposed location, depth and construction of the additional wells necessary to meet the permit requirements.

b. The rationale for the proposed locations.

All wells required pursuant to this condition must be installed within 60 days of NJDEPE written approval.

- IX. The Corrective Action outlined in the approved plan shall be initiated as soon as is reasonably possible.
- X. The permittee must comply with all applicable requirements of N.J.A.C. 7:14A-5.1. The following program, General Conditions for the Underground Injection Control (UIC) of Class IV wells are specified based on those requirements.

A. Construction Requirements

1. Construction of Injection System

- a) The injection system must be constructed in accordance with the plans submitted.
- b) The area of review for the injection fields shall be determined in accordance with N.J.A.C. 7:14A-5.13(a)1-3. The ground water recovery system must be considered in making this determination.

B. Operation and Maintenance

1. General Requirements

- a) The permittee must obtain a well drilling permit before constructing any well. Applications for well permits can be obtained from:

Water Supply Element  
CN-029  
Trenton, New Jersey 08625

- b) The permittee is required to submit inventory information regarding the well(s) to the

Department when an application is made for a Class IV well drilling permit. This information must consist of the following:

- well drilling permit number
- facility name and location
- name and address of legal contact
- ownership of facility
- owner of property where well is installed
- nature and type of injection well(s)
- operating status of injection well(s)

2. Pursuant to N.J.A.C. 7:14A-5.7(b), the Department required the permittee to obtain this UIC/NJPDES permit for Class IV injection wells. The protection of the underground sources of drinking water require that the injection system be regulated by requirements for corrective action, monitoring and reporting and operation. Pursuant to N.J.A.C. 7:14A-5.9, the following conditions apply:

- a) The permittee does not need to comply with the provisions of the UIC permit if noncompliance is authorized under a temporary emergency permit
- b) The permittee shall retain all monitoring records and all records concerning the nature and composition of injected fluids until five (5) years after completion of any plugging and abandonment procedures.
- c) New injection wells may not commence injection until construction is complete and the permittee has submitted well completion reports and the Department has inspected or otherwise reviewed the new injection wells and finds them in compliance with permit conditions.

#### C. Contingency Requirements

1. Pursuant to N.J.A.C. 7:14A-5.9(a)4, the permittee is required to report to the Department the following conditions within 2 hours:

- a) Any monitoring or other information which indicate that contaminants may endanger a potable supply well.
- b) Any noncompliance with permit conditions or a malfunction of the injection system that may cause contaminated fluid migration to a potable supply well.

2. Pursuant to N.J.A.C. 7:14A-5.9(a)5, the permittee is required to report to the Department the following conditions within 24 hours:
  - a) Any monitoring or information which indicate that a contaminant may cause endangerment to an underground source of drinking water.
  - b) Any noncompliance with permit conditions or a malfunction of the injection system that may cause fluid migration into or between underground sources of drinking water.
3. Pursuant to N.J.A.C. 7:14A-5.4, no UIC authorization will be allowed if a Class IV well causes or allows movement of fluids containing any contaminants into underground sources of drinking water and if the presence of the contaminants may cause a violation of any primary drinking water standards under N.J.A.C. 7:10-5, ground water quality standards under N.J.A.C. 7:9-6 or which may adversely affect the health of humans. If at any time the Department learns that Class IV wells are causing violations as stated above, the Department shall:
  - a) Order the permittee to take such action as is necessary to prevent or stop the violation; and/or
  - b) Take enforcement action.

D. Plugging and Abandonment

1. The permittee shall notify the Department at least 180 days before the conversion or abandonment of the well. Along with this notice, the permittee shall submit a plugging and abandonment plan which will follow the requirements of N.J.S.A 58:4A-4.1 et seq and N.J.A.C. 7:9-9 (sealing of abandoned wells) where applicable.

**SPECIAL CONDITIONS FOR POST-CLOSURE OF THE RCRA REGULATED LAGOONS****I. Glaze Basin**

- A. Post-closure care of the glaze basin has been approved by the Department following completion of the closure of the glaze basin in July 1990. The permittee shall implement the approved post-closure plan entitled "Post-closure Plan - Glaze Basin, Lenox China, Pomona, New Jersey" dated October 1988, with the clarifications and conditions listed below.
- B. In accordance with N.J.A.C. 7:26-9.9(m), Lenox submitted a survey plat to the Department and local zoning authority that details the location and size of the closed area with respect to permanent, surveyed benchmarks. The plat was prepared and certified by a professional land surveyor. This survey plat was received by the Department on May 24, 1990.
- C. In accordance with N.J.A.C. 7:26-9.9 (e), the permittee will not use the portion of the closed glaze basin along the north wall where hazardous waste and residual contaminated subsoil remains in any way which will disturb the integrity and function of the cap and well monitoring systems.
- D. Lenox shall regularly maintain and inspect monthly the paved cap to ensure the structural integrity and make repairs as needed. Inspection of the cap and the well system will be conducted on a monthly basis. The inspection reports will be filed quarterly and will summarize the following information:
  - 1. The condition of the final cap.
  - 2. The condition of all ground water monitoring equipment.
  - 3. Any maintenance required during the post-closure period in order to comply with post-closure monitoring.
- E. Ground water sampling, analysis and reporting will follow all applicable guidelines and requirements of Part III-DGW section of this permit entitled Detection and Corrective Action Ground Water Monitoring Requirements and Standards.
- F. Post-closure maintenance and well monitoring shall continue for 30 years after closure. The time period for post-closure care may be shortened or extended by the Department in accordance with N.J.A.C. 7:26-9.9(c).

## II. Slip Basin

- A. Post-closure care of the slip basin has been approved by the Department following the completion of closure of the slip basin in September 1990. The permittee shall implement the approved post-closure plan with the conditions and clarifications listed below.
- B. In accordance with N.J.A.C. 7:26-9.9(e), the permittee may not use any portion of the closed slip basin in any way that will disturb the integrity and function of the cap and ground water monitoring system in this area.
- C. Lenox shall regularly maintain and inspect the final cover to ensure soil erosion control and structural integrity. Lenox will also ensure that the appropriate vegetation for the soil and climate is grown and maintained on the cap on a year round basis. Inspection reports will be filed quarterly and will summarize the following information:
- 1) The integrity of the cap.
  - 2) The condition of the ground water monitoring wells for the closed basin.
  - 3) Any maintenance and repairs required during the post-closure period in order to comply with post-closure care and monitoring.
- D. Ground water sampling, analysis and reporting will follow all applicable guidelines and requirements as listed in the section of this permit entitled Detection and Corrective Action Ground Water Monitoring Requirements and Standards.
- E. Post-closure requirements and well monitoring shall continue for thirty (30) years after closure of the basin. The time period for post-closure may be shortened or extended by the Department in accordance with N.J.A.C. 7:26-9.9(c).

**APPENDIX A**  
**INTERIM REMEDIAL MEASURES: SCOPE OF WORK**

**I. Requirements of Interim Remedial Measures**

- A. The Permittee must document and assess the effectiveness of all existing remedial measures that are currently being implemented at the site that address soil, ground water or surface water remedial actions. A report must be prepared and submitted to address the following issues:
1. effectiveness to adequately protect human health and the environment and consistency with and integration into any long term solutions at the facility;
  2. the nature and extent of the pollution at and/or emanating from the site which the existing remedial action is designed to remediate;
  3. compliance with applicable numeric and narrative state and federal regulations, including surface water and ground water quality standards pursuant to N.J.A.C. 7:14A-1 et seq., 7:9-5, & 7:9-6 and other regulations adopted by the Department;
  4. comparison with background or ambient conditions;
  5. source controls;
  6. schedules for design, construction, and monitoring;
  7. design, construction, operation, and maintenance requirements;
  8. schedules for progress reports.
- B. Determine, in as much detail as possible, all interim remedial measures that the company is to take immediately, such as:
1. providing a fence or other security measure; to restrict public access or otherwise ensure the structural integrity of monitoring and remediation equipment;
  2. securing spilled or damaged drums/containers, tanks, lagoons, or surface impoundments that have



discharged hazardous substances; or are not contained or constructed pursuant to applicable regulations;

3. controlling run-off and/or run-on;
4. covering or removing waste piles;
5. providing water treatment, bottled water, or extension of water lines if determined to be necessary to protect human health;
6. sampling of private potable wells under local health department or NJDEPE supervision if required and appropriate;
7. begin or increase pumping and proper disposal of contaminated ground water;
8. upgrade existing treatment facilities if they do not currently provide adequate treatment to meet operating or discharge standards;
9. retrofit leaking lagoon or surface impoundment;
10. eliminate, cap or cover solid waste management unit or any contamination source;
11. construct a slurry wall;
12. construct a leachate and/or effluent collection system;
13. comply with all local, state, and federal health and safety monitoring and reporting requirements applicable to activities regulated by this permit.

## II. Contents of Interim Remedial Measures Work Plan

- A. A detailed list of requirements for the interim remedial measures plan pursuant to section I.B. above,
- B. A detailed schedule for all interim remedial measures required by this permit and in this Scope of Work, including a time schedule for:
  1. submission of any necessary permit applications;
  2. start and ending of all field activities;
  3. submission of progress and interim remedial measure performance evaluation reports; and

4. implementation of approved interim measures.
- C. A detailed engineering design for each required interim remedial measure including but not limited to:
1. a description of appropriate new or additional containment, treatment and/or disposal technologies;
  2. a description of special engineering considerations required to upgrade existing facilities;
  3. a description of operation, maintenance and monitoring requirements of each interim remedial measure;
  4. off-site disposal needs and transportation plans;
  5. additional temporary or permanent storage requirements;
  6. safety requirements for interim remedial measures;
  7. a list of all Federal, State, and local permits required for each measure;
  8. a review of each measure to ensure compliance with applicable statutes and regulations;
  9. a description of the ability of each measure to be phased into individual operable units; and,
  10. a discussion of any limits or constraints each measure may place on final remedial alternatives and steps taken to minimize these limits or constraints.
- D. A detailed performance evaluation program for all proposed interim measures.

**APPENDIX B**  
**RCRA FACILITY INVESTIGATION: SCOPE OF WORK**

**I. Requirements of RCRA Facility Investigation**

- A. Fully characterize all waste and other materials which are, or may be, the source(s) of pollution at the site;
- B. Fully determine the nature, type, and physical states of soil, surface water, and/or ground water pollution at and/or emanating from solid waste management units and/or other potential contaminant source areas at the site;
- C. Fully determine the horizontal and vertical extent of soil, surface water, and ground-water pollution at and/or emanating from solid waste management units and/or other potential contaminant source areas at the site;
- D. Fully determine migration paths of pollutants through soil, ground water, surface water and sediment;
- E. Fully determine impact of the pollution on human health and the environment; and,
- F. Collect, present, and discuss all data necessary to adequately support the development of a corrective measures study and the selection of a remedial action alternative that will remediate the adverse impacts of the pollution on human health and the environment.

**II. Contents of Facility Background Report**

- A. A complete site history including:
  - 1. A history and description, including dates, of all known uses and activities on the site (including solid and hazardous waste generation, treatment, storage, and disposal activities), both past and present;
  - 2. A list of all known materials used and products made, past and present, including all pertinent dates; and,
  - 3. A description (including location) of all known past and present possible source areas of contamination at the facility, including, at a

minimum, all hazardous and solid waste management units, spill or disposal areas, and other known or suspected pollution source areas. At a minimum, for each waste management unit or other possible source area, identify the following:

- a. dates of operation;
  - b. identification of wastes/substances stored, treated, or disposed of;
  - c. unit/area dimensions;
  - d. design and construction information, including materials of construction;
  - e. quantity of wastes/substances stored, treated, or disposed of;
  - f. plant coordinate location; and,
  - g. locations where additional information is necessary (this information must be collected in accordance with Section III.B.2. below);
4. Historical site plans and facility as-built construction drawings available to or in the facility's possession;
  5. Aerial photographs of the site in the facility's possession or available to the facility;
  6. A quantitative site water budget describing current water management practices, including: input, use, distribution and discharge; Evaluation of precipitation and evapotranspiration is not needed but any active or passive stormwater management should be included. (Also should include approximate quantities for input use and discharge where values are readily available.)
  7. Map(s) depicting the following:
    - a. general geographic location;
    - b. property lines, with the present owners of all adjacent property clearly indicated;
    - c. topography and surface drainage (with a contour interval of 10 feet and a scale of 1 inch = 400 feet) depicting all waterways, wetlands, floodplains, known drainage patterns, and surface water containment areas;

- d. tanks, treatment or major production equipment, buildings, utilities, paved areas, easements, right-of-ways, and other features;
- e. all known hazardous waste treatment, storage, or disposal areas active after November 19, 1980;
- f. all known past and all present solid or hazardous waste treatment, storage, or disposal areas regardless of whether they were active on November 19, 1980;
- g. all known past and present product and waste underground tanks, piping, or other underground facilities;
- h. surrounding land uses (e.g. industrial, residential, commercial, agricultural, recreational); and,
- i. the location of all known production wells, public and private potable wells, and ground water monitoring wells on-site and within a 1/2 mile radius of the site. These wells shall be clearly labeled with ground and top of casing elevations and construction details included if known (these elevations and details may be included as an attachment if available from public records).

All maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site;

- 8. Approximate dates or periods of past product and waste spills, identification of the materials spilled, amounts spilled, locations where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response.
- 9. All existing environmental data relevant to the site, including a summary, review and evaluation.

### III. Contents of RCRA Facility Investigation Work Plan

IMPORTANT NOTE: All of the following items shall be in the RFI Work Plan. If any of the items have previously been submitted or completed, it shall be so stated in the RFI Work Plan. For

these previously submitted items, the following shall be in the RFI Work Plan:

- description of items submitted and/or summary of investigation completed;
- date(s) of submission or completion; and,
- any known changes or new information developed since submission or completion.

The Department will determine the extent to which prior submissions or completions may satisfy specific items required by this Scope of Work.

A. A Statement of requirements for the remedial investigation pursuant to Section I., above.

B. Field Sampling Plan

1. Environmental Setting

The Permittee shall collect information to supplement and verify existing information on the environmental setting at the facility. The following shall serve as a guide to assist the permittee in identifying the items that may require characterization during the RFI and in the development of the Corrective Measures Study.

a. Hydrogeology

1) A description of the regional and facility-specific geologic and hydrogeologic characteristics affecting ground water flow beneath the facility, including:

(a) regional and facility-specific stratigraphy and description of strata including strike and dip, identification of stratigraphic contacts;

(b) description of local and regional structural features (e.g. folding, faulting, tilting, jointing, etc.);

(c) depositional history;

(d) identification and characterization of areas and amounts of recharge and discharge;

- (e) regional and facility-specific ground water flow patterns; and,
  - (f) characterization of seasonal variations in the ground water flow regime.
- 2) An analysis of any topographic features that might influence the ground water flow system. (Note: stereographic analysis of aerial photographs may aid in this analysis)
- 3) Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (e.g. the aquifers and any intervening saturated and unsaturated units), including:
- (a) hydraulic conductivity and porosity (total and effective);
  - (b) lithology, grain size, sorting, degree of cementation;
  - (c) an interpretation of hydraulic interconnections between saturated zones;
  - (d) the attenuation capacity and mechanisms of the natural earth materials (e.g. ion exchange capacity, organic carbon content, mineral content, etc.);
  - (e) sand and gravel deposits in unconsolidated deposits;
  - (f) zones of fracturing or channeling in consolidated or unconsolidated deposits;
  - (g) zones of higher permeability or lower permeability that might direct and/or restrict the flow of contaminants;
  - (h) the uppermost aquifer: geologic formation, group of formations, or part of a formation capable of

yielding a significant amount of ground water to wells or springs; and,

- (i) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.
- 5) Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure in all significant hydrogeologic units at the site, including:
- (a) water level contour and/or potentiometric maps;
  - (b) hydrologic cross-sections showing vertical gradients;
  - (c) the flow system, including the vertical and horizontal components of flow, and seepage velocity;
  - (d) any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences; and,
  - (e) background or ambient ground water chemistry.
- 6) A description of man-made influences that may affect the hydrogeology of the site, identifying:
- (a) active and inactive local water supply and production wells with an approximate schedule of pumping; and
  - (b) man-made hydraulic structures (pipelines, french drains, ditches).

b. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table at the site. Such characterization shall include, but not be



limited to, consideration of the following information:

- 1) SCS soil classification;
- 2) Surface soil distribution;
- 3) Soil profile, including ASTM classification of soils;
- 4) Transects of soil stratigraphy;
- 5) Hydraulic conductivity (saturated and unsaturated);
- 6) Relative permeability;
- 7) Bulk density;
- 8) Porosity;
- 9) Soil attenuation capacity;
- 10) Cation exchange capacity;
- 11) Soil organic content;
- 12) Soil pH;
- 13) Particle size distribution (i.e. texture);
- 14) Depth to water table;
- 15) Moisture content;
- 16) Effect of stratification and structure on unsaturated and saturated flow;
- 17) Infiltration;
- 18) Evapotranspiration;
- 19) Storage capacity;
- 20) Vertical flow rate; and,
- 21) Mineral content.

c. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies within 1/2 miles of the facility. Such

characterization shall include, but not be limited to, consideration of the following activities and information:

- 1) Description of the temporal and permanent surface water bodies including:
  - (a) for lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature, stratification, and volume;
  - (b) for streams, ditches, drains, swamps, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (e.g. 100 year event);
  - (c) drainage patterns; and,
  - (d) evapotranspiration.
- 2) Description of the chemistry of the natural surface water and sediments. This shall include determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients ( $\text{NH}_3$ ,  $\text{NO}_3^-/\text{NO}_2^-$ ,  $\text{PO}_4^{3-}$ ), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.
- 3) Description of sediment characteristics including:
  - (a) deposition area;
  - (b) thickness profile; and,
  - (c) physical and chemical parameters (e.g. grain size, density, organic carbon content, exchange capacity, pH, etc.,)

## 2. Characterization of Contaminated Areas

The Permittee shall conduct those investigations necessary to define the source, degree, and extent of contamination, and identify actual or potential receptors. The Technical Enforcement Guidance Document (TEGD), the RFI Guidance Manual, the Field Procedures Manual for Water Data

Acquisition, the NJDEP-DHWM draft ECRA Sampling Plan Guide, and the NJDEP-DHSM Field Sampling Procedures Manual (February 1988) are to be used as guidance in designing these investigations.

a. Source Characterization

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, collected, or removed including: type, quantity, physical form, disposition (containment or nature of deposits); and facility characteristics affecting release (e.g. facility security, and engineered barriers). This shall include quantification of the following specific characteristics for each source area:

1) Unit/Disposal Area Characteristics:

- (a) location of unit/disposal area;
- (b) type of unit/disposal area;
- (c) design features;
- (d) operating practices (past and present);
- (e) period of operation;
- (f) age of unit/disposal area;
- (g) general physical conditions; and,
- (h) method used to close the unit/disposal area.

2) Waste Characteristics:

Specify number, type, and frequency of samples required to accurately characterize all solid waste presently located in tanks, drums, lagoons/impoundments, piles, or otherwise at the site. This characterization effort must be able to define the following as applicable to the specific waste type;

## (a) Type of waste placed in the unit;

- i) hazardous classification (e.g. listed or characteristic);
- ii) quantity; and,
- iii) chemical composition.

## (b) Physical and chemical characteristics

- i) physical form (solid, liquid, gas);
- ii) physical description (e.g. powder, oily sludge);
- iii) temperature;
- iv) pH;
- v) general chemical class (e.g. acid, base, solvent);
- vi) octanol/water partition coefficient;
- vii) density;
- viii) boiling point;
- ix) viscosity;
- x) solubility in water;
- xi) vapor pressure; and,
- xii) flash point.

## (c) Migration, transformation, and dispersal characteristics of the waste:

- i) mobility/attenuation;
- ii) biodegradability, bioconcentration, biotransformation; and,
- iii) chemical transformations.

- 3) Explain the type of data which will be collected, justification for collection, and intentions for use of the data;

- 4) Specify location (on site map) and depths of proposed soil borings, test pits and other sampling points;
- 5) Specify investigation procedures in accordance with the following:
  - (a) obtain drilling permits for all soil borings pursuant to N.J.A.C. 58:4A-14 (includes all borings that intersect a water table and all borings that are greater than 25 feet deep);
  - (b) obtain all soil borings under supervision of a qualified geologist, and, where a well permit is required, also under direct supervision of a New Jersey licensed well driller;
  - (c) decontaminate soil boring and sampling equipment between individual samples and borings according to the approved decontamination procedures contained in the approved Data Collection/Quality Assurance Plan (Appendix C);
  - (d) classify waste as required by and according to N.J.A.C. 7:26-et seq. and any other applicable state statutes and regulations;
  - (e) use field instrument (PID, FID) to analyze soil samples in the field;
  - (f) analyze waste samples to quantify and determine type of pollutants, by methods specified in the approved Data Collection/Quality Assurance Plan (Appendix C); and
  - (g) permanently seal all soil borings that required well permits using a New Jersey licensed well driller certified to seal wells.

b. Soil Investigation

- 1) Specify number, type, and frequency of samples required to accurately define the horizontal and vertical extent of

soil pollution at and/or emanating from each solid waste management unit and the site;

- 2) Explain the type of data which will be collected, justification for collection and intentions for use of the data;
- 3) Specify location (on-site map) and depths of proposed soil borings, test pits, and other sampling points;
- 4) Specify investigation procedures in accordance with the following:
  - (a) obtain drilling permits for all soil borings pursuant to N.J.A.C. 58:A-14 (includes all borings that intersect a water table and all borings that are greater than 25 feet deep);
  - (b) obtain all soil borings under supervision of a qualified geologist, and where a well permit is required, also under direct supervision of a New Jersey licensed well driller;
  - (c) decontaminate soil boring and sampling equipment between individual samples and borings according to the approved decontamination procedures contained in the approved Data Collection/Quality Assurance Plan (Appendix C);
  - (d) classify soil according to the USDA classification system;
  - (e) analyze particle size in laboratory on representative samples to confirm field identification;
  - (f) use field instruments (PID, FID) to analyze soil samples in the field;
  - (g) analyze soil samples to quantify and determine type of pollutants, by methods specified in the approved Data Collection Quality Assurance Plan (Appendix C);

- (h) determine contaminant and soil chemical properties (i.e. contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, oxidation, hydrolysis, photolysis, and other factors that might affect contaminant migration and transformation) within each contaminant source area and plume;
- (i) determine the approximate rate and direction of contaminant movement in the vicinity of the contaminant release;
- (j) extrapolate future contaminant movement;
- (k) permanently seal all soil borings that required a well permit using a NJ licensed well driller certified to seal wells; and,
- (l) permanently seal all other borings so that they do not act as conduits for liquid migration.

5) Determine Subsurface Gas Contamination:

- (a) If applicable, the Permittee shall conduct an investigation to characterize gases emitted from subsurface contaminant sources. This investigation shall include the following information:
  - i) a description of the horizontal and vertical extent of subsurface gas migration;
  - ii) the chemical composition of the gases being emitted;
  - iii) the rate, amount, and density of the gases being emitted; and,
  - iv) horizontal and vertical concentration profiles of the subsurface gases emitted.
- (b) The Permittee shall document the procedures used in making the above determinations.

## c. Ground Water and Potable Well Investigation:

- 1) Specify number, locations (on map) and designs of existing and proposed piezometers, monitor wells, private potable wells and production wells on the site and within at least a 1/2 mile radius of the site (Public supply wells within a one-mile radius of the site should be included);
- 2) Specify number, type and frequency of ground-water monitoring and potable well samples and other sampling points required to accurately define the horizontal and vertical extent of ground-water pollution (dissolved or immiscible) at and/or emanating from the site;
- 3) Explain the type of data which will be collected, justification for collection, and intentions for use of the data. At a minimum this data and information gathered from the Environmental Setting characterization should be used to provide the following information:
  - (a) the horizontal and vertical direction of contaminant movement;
  - (b) the velocity of contaminant movement;
  - (c) the horizontal and vertical concentration profiles of contaminants in the plume;
  - (d) an evaluation of factors influencing the plume movement; and,
  - (e) an extrapolation of future contaminant movement.
- 4) Specify frequency of synoptic static water level measurements;
- 5) Specify investigation procedures in accordance with the following:
  - (a) have a qualified hydrogeologist with substantial experience in ground-



water pollution investigations  
oversee all site activities;

- (b) obtain well drilling permits pursuant to N.J.S.A. 58:4A-14;
- (c) drill all wells under the direct supervision of a New Jersey licensed well driller and a qualified hydrogeologist; and,
- (d) install wells in accordance with the monitor well specifications in Appendix D and any specific requirements listed in Part IV of this permit;

IMPORTANT NOTE:

Improperly constructed monitor wells can compound a pollution problem. Therefore, particular attention shall be given to the details of the these specifications. The Department has the authority to shut down a drilling operation which is not adhering to the approved procedures. Data derived from improperly constructed wells shall not be accepted by the Department.

- (e) collect split spoon samples during drilling through the overburden according to ASTM Standard Penetration Methods, ASTM D1586-67, at five-foot intervals, at changes in soil strata, and at all zones which show obvious signs of pollution; with a specific number of drilling locations including continuous split spoon samples to fully define subsurface stratigraphy;
- (f) collect sufficient rock core, according to ASTM Diamond Core Drilling Methods, ASTM 2113-70, during the drilling of bedrock monitor wells to obtain a thorough understanding of fracture patterns beneath the site;
- (g) descriptions of the core(s) must be written using current descriptive geological terminology. This would include consideration of the following: composition, texture

(grain size, shape, sorting, packing, and color), and structure (joints, fractures) of each identified unit. Descriptions such as "dense hard rock" or "soft weathered shale" are not acceptable;

- (h) retain all soil and rock samples for future reference and/or analysis;
- (i) complete geophysical surveys and/or ground-water modeling as appropriate for the site;
- (j) complete sufficient aquifer testing to adequately define aquifer characteristics and develop recovery well design for aquifer restoration;
- (k) decontaminate drilling and sampling equipment after each drilling and sampling event according to the decontamination procedures specified in the approved Data Collection Quality Assurance (DCQA) Plan (Appendix C);
- (l) survey all well casings to the nearest hundredth (0.01) foot above mean sea level and horizontally to an accuracy of one-tenth of a second latitude and longitude by a New Jersey licensed land surveyor;
- (m) collect all ground water and other samples pursuant to N.J.A.C. 7:14A-6.12 and the procedures specified in the approved DCQA Plan (Appendix C);
- (n) well samples shall not be collected within 14 calendar days of installation and development of the well;
- (o) analyze ground water samples to quantify and determine type of pollutants, by methods specified in the approved Data Collection Quality Assurance Plan (Appendix C); and,
- (p) permanently seal any wells that are improperly constructed, are compounding a pollution problem, or are no longer serving any purpose, pursuant to N.J.S.A. 58:4A-4.1 et

seg. and using a licensed well driller certified to seal wells.

- 6) Certain monitoring locations may require clusters of wells to sample distinct depth intervals, while other locations will require only a single well. The Permittee shall install as many single and cluster wells, in as many locations as necessary (both upgradient and downgradient of all known and potential contaminant source areas) to effectively investigate and monitor all water producing zones beneath or surrounding the site that may have been contaminated by discharges from the facility, and to meet the requirements of c.3) in the above section.

d. Surface Water and Sediment Investigation:

- 1) Specify number and type of samples required to accurately determine the horizontal and vertical extent of surface water and sediment pollution (dissolved or immiscible) at and/or emanating from the site;
- 2) Specify location (on site map) of surface water and sediment sampling points;
- 3) Explain the type of data which will be collected, justification for collection, and intentions for use of the data. At a minimum this data and information gathered pursuant to the Environmental Setting characterization should be used to provide the following information:
  - (a) the horizontal and vertical direction of contaminant movement;
  - (b) the contaminant velocity;
  - (c) an evaluation of the physical, biological, and chemical factors influencing contaminant movement; and,
  - (d) an extrapolation of future contaminant movement.

- 4) Specify EPA analytical procedures, including test parameters, for surface water and sediment analyses; and,
- 5) Specify investigation procedures in accordance with the following:
  - (a) collect and analyze surface water and sediment samples to determine the presence of pollutants in the surface water and sediment according to the approved sampling plan, and,
  - (b) decontaminate sampling equipment between sampling events according to the decontamination procedures specified in the approved DCQA Plan.

e. Potential Receptors:

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analyses of biological samples may be needed. The following characteristics shall be identified:

- 1) Local uses and possible future uses of ground water:
  - (a) type of use (e.g. drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and,
  - (b) location of ground water users including wells and discharge area.
- 2) Local uses and possible future uses of surface waters draining the facility:
  - (a) domestic and municipal (e.g. potable and lawn/garden watering);
  - (b) recreational (e.g. swimming, fishing);
  - (c) agricultural and industrial; and,
  - (d) environmental (e.g. fish and wildlife propagation).

- 3) Human use of, or access to the facility and adjacent lands, including but not limited to:
  - (a) recreation and hunting;
  - (b) residential and commercial;
  - (c) zoning;
  - (d) employees on site not covered by Health and Safety Plan and its medical surveillance program; and,
  - (e) relationship between population locations and prevailing wind direction.
- 4) A description of the biota in surface water bodies within, adjacent to, or impacted by the facility;
- 5) A description of the possible effects on ecosystems as a result of discharges from the facility;
- 6) A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups; and,
- 7) A description of any endangered or threatened species near the facility. The Permittee must contact the Natural Heritage program at (609) 984-0097 to initiate this investigation.

#### IV. Contents of RCRA Facility Investigation Report

The Permittee shall prepare an analysis and summary of all facility investigations and their results. The report shall document that the investigation data are sufficient in quality (e.g. quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support the Corrective Measures Study and/or the Detection Monitoring Program.

##### A. Presentation of Data:

The Permittee shall analyze all facility investigation data outlined in the approved RFI Workplan and prepare

a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area. Data to be submitted shall include, at a minimum, the following:

1. Results of all analyses on data sheets supplied by the Department, laboratory data sheets and the required quality assurance documentation;
2. Summary table(s) of all analyses;
3. Stratigraphic logs including grain size and field instrument readings detected during drilling for each soil boring and monitor well;
4. As-built construction diagrams for each soil boring and monitor well;
5. Well casing elevations to the nearest hundredth (0.01) foot above mean sea level, taken at the top of casing with locking cap removed;
6. Depth to ground water to the nearest hundredth (0.01) foot above mean sea level, taken at the top of well casing prior to sampling with cap removal; and,
7. All support data including graphs, equations, references, raw data, etc.

B. Maps:

1. Sampling location map(s);
  - a. monitor well, production or potable well locations and casing elevations;
  - b. sample collection locations; and,
  - c. soil boring locations.
2. Soil quality contour map(s) and cross section(s);
3. Ground-water elevation contour maps for each aquifer on multiple dates;
4. Ground-water quality contour map(s) and cross section(s); and,
5. Bedrock contour map.

## C. Discussion of Data:

1. Waste characterization, including degree of hazard and probable quantities of waste, by type;
2. Description of site/regional hydrogeology and its relation to migration of pollutants;
3. Direction and rate of ground-water flow in the aquifer(s), both horizontally and vertically;
4. Classification of aquifers directly beneath the site and/or likely to be impacted by site activities; and of surface water bodies present on-site or likely to be impacted by discharges (direct or indirect) from the site. Classifications shall be based on applicable portions of N.J.A.C. 7:9-6;
5. Levels of soil, surface water and ground-water pollution as compared with applicable standards pursuant to N.J.A.C. 7:14A-1 et seq., 7:9-5, 7:9-6, and/or other applicable promulgated standards, or background levels where pertinent;
6. Extent of soil, surface water and ground-water pollution both on and off-site;
7. Pollutant behavior, stability, biological and chemical degradation, mobility and any other relevant factors pertinent to the investigation;
8. Projected rate(s) of pollution movement;
9. Identification of all known pollution sources; and,
10. Identification of critical pollutants.

## D. Assessment of Impact of Pollution on Human Health and the Environment:

1. Identification of human receptors in the paths of pollutants and specific routes to target organs (e.g. liver);
2. Identification of the receiving media and/or ecological groups and migration pathways of critical pollutants;
3. Toxicology of each critical pollutant (acute and chronic toxicity for short- and long-term exposure, carcinogenicity, mutagenicity, teratogenicity, synergistic and/or antagonistic

associations, aquatic toxicity, ecological impacts on flora and fauna, etc.);

4. Migration potential and environmental fate of each critical pollutant in site-specific terms (e.g., attenuation, dispersion and biodegradation are factors in the ground-water pathway); and,
5. Evaluation of potential for biomagnification and/or bioaccumulation of critical pollutants in the food chain.

E. Recommendations for Additional Investigations:

The Permittee should include recommendations for additional investigation(s) involving:

1. waste;
2. soil;
3. ground water;
4. surface water and sediment; and,
5. air



**APPENDIX C**  
**RFI SUPPORTING PLANS: SCOPE OF WORK**

**I. PROJECT MANAGEMENT PLAN**

- A. The Permittee shall prepare a Project Management Plan which will include a discussion of the schedules and estimated budget for required activities. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RCRA Facility Investigation (RFI), including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.
- B. The Permittee shall be required to submit a detailed schedule for all RCRA facility investigation activities set forth in this Permit and in this Scope of Work including:
1. Dates for submission of any required permit applications;
  2. Schedules for start and ending of all field investigations;
  3. Proposed schedule for submission of all reports; and,
  4. Identification of all key personnel, including contractor personnel, who will participate in the remedial investigation, and a description of their qualifications and responsibilities. This should include an identification of one individual designated to perform as overall project manager.

**II. DATA COLLECTION QUALITY ASSURANCE PLAN:**

The Data Collection Quality Assurance (DCQA) Plan shall document all monitoring procedures: sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, contamination source(s), and migration of pollutants, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented. The Permittee is referred to the TEGD and the RFI Guidance Manuals, and the NJDEP - DHWM Field Sampling Procedures Manual (February 1988) for assistance with preparation of the various Sections of this DCQA Plan.

2/28/88

## A. Data Collection Strategy:

The strategy section of the Data Collection Quality Assurance (DCQA) Plan shall include, but not be limited to, the following:

1. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;
2. Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;
3. Description of the rationale used to assure that the data accurately and precisely represent characteristics of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Examples of factors which shall be considered and discussed include:
  - a. Environmental conditions at the time of sampling;
  - b. Number of sampling points;
  - c. Representativeness of selected media; and,
  - d. Representativeness of selected analytical parameters.
4. Description of the measures to be taken to assure that the same procedures are followed throughout the RFI regardless of who generates the data; and,
5. Details relating to the schedule and information to be provided in quality assurance reports. The reports should include, but not be limited to:
  - a. Periodic assessment of measurement data accuracy, precision, and completeness;
  - b. Results of performance audits;
  - c. Results of system audits;
  - d. Significant quality assurance problems and recommended solutions; and,
  - e. Resolutions of previously stated problems.

**B. Sampling**

The sampling section of the DCQA Plan shall, at a minimum, address the following:

1. Selecting appropriate sample containers;
2. Sample preservation;
3. Chain-of-custody, including:
  - a. standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and,
  - b. pre-prepared sample labels containing all information necessary for effective sample tracking.
4. Documenting field sampling operations and procedures, including:
  - a. documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g. filters and adsorbing reagents);
  - b. procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
  - c. documentation of specific sample preservation method;
  - d. calibration of field devices;
  - e. collection of replicate samples;
  - f. submission of field-biased blanks, where appropriate;
  - g. potential interferences (e.g., sampling matrix);
  - h. construction materials and installation techniques of monitoring wells and piezometers;
  - i. field equipment listing and sample containers;
  - j. sampling order; and,
  - k. decontamination procedures.

## C. Field Measurements:

The field measurements section of the Data Collection Quality Assurance Plan shall discuss:

1. Selecting appropriate field measurement locations, depths, etc.;
2. Measuring all necessary ancillary data (i.e. wind direction, temperature, etc.);
3. Determining conditions under which field measurements should be conducted;
4. Determining which media are to be addressed by appropriate field measurements (e.g. ground water, air, soil, sediment, etc.);
5. Determining which parameters are to be measured and where;
6. Selecting the frequency of field measurement and length of field measurement periods; and,
7. Documenting field measurement operations and procedures including:
  - a. procedures and forms for recording raw data and the exact location, time, and facility-specific considerations associated with the data acquisition;
  - b. calibration of field devices;
  - c. collection of replicate measurements;
  - d. submission of field-biased blanks, where appropriate;
  - e. potential interferences present at the facility;
  - f. field equipment listing;
  - g. order in which field measurements were made; and,
  - h. decontamination procedures.

**D. Sample Analysis:**

The sample analysis section of the Data Collection Quality Assurance Plan shall specify the following:

1. Chain-of-custody procedures, including:
  - a. identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
  - b. provision for a laboratory sample custody log consisting of serially-numbered standard lab-tracking report sheets; and,
  - c. specification of laboratory sample custody procedures for sample handling, storage, and dispersment for analysis.
2. Sample storage and holding times;
3. Sample preparation methods;
4. Analytical procedures, including:
  - a. scope and application of the procedure
  - b. sample matrix;
  - c. potential interferences (e.g., sampling matrix);
  - d. precision and accuracy of the methodology; and,
  - e. method detection limits.
5. Calibration procedures and frequency;
6. Data reduction, validation, and reporting;
7. Internal quality control checks, laboratory performance, and systems audits and frequency, including:
  - a. method blank(s);
  - b. laboratory control sample(s);
  - c. calibration check sample(s);
  - d. replicate sample(s);
  - e. matrix-spiked sample(s);

- f. "blind" quality control sample(s);
- g. control charts;
- h. surrogate samples;
- i. zero and span gases; and,
- j. reagent quality control checks.

\*NOTE: The Department reserves the right to conduct a performance audit of any laboratory selected by the Permittee, and to disapprove the use of any laboratory selected by the Permittee for a failure to meet quality control criteria.

- 8. Preventive maintenance procedures and schedules;
- 9. Corrective action (for laboratory problems); and,
- 10. Turnaround time.

E. Data Deliverable Requirements:

The data deliverable section of the Quality Assurance Plan shall discuss and justify the use of the attached QA/QC data deliverable package as opposed to the Tier I data deliverable package at different sampling events throughout the RFI.

### III. DATA MANAGEMENT PLAN

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This Plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

A. Data Record:

The data record shall include the following:

- 1. Unique sample or field measurement code;
- 2. Sampling or field measurement location and sample or measurement type;
- 3. Sampling or field measurement raw data;
- 4. Laboratory analysis ID number;

5. Property or component measured; and,
6. Result of analysis (e.g., concentration).

B. Tabular Displays:

The following data shall be presented in tabular displays:

1. Unsorted (raw) data;
2. Results for each medium, or for each constituent monitored;
3. Data reduction for statistical analysis;
4. Sorting of data by potential stratification factors (e.g. location, soil layer, topography); and,
5. Summary data.

C. Graphical Displays:

The following data shall be presented in graphical formats (e.g. bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

1. sampling location and sampling grid;
2. boundaries of sampling area, and areas where more data are required;
3. levels of contamination at each sampling location;
4. geographical extent of contamination;
5. contamination levels, averages, and maxima;
6. changes in concentration in relation to distance from the source, time, depth, or other parameters;
7. features affecting intramedia transport; and,
8. potential receptors.

IV. HEALTH AND SAFETY PLAN

A Health and Safety Plan shall be developed and implemented for the site investigation and remedial activities. The purpose of this plan is to minimize the risk of personnel injury, illness, and potential environmental impairment during these activities.

The safety plan must be periodically reviewed to be kept current and technically correct.

A. The Health and Safety Plan shall be consistent with:

1. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities;
2. EPA Order 1440.1 - Respiratory Protection;
3. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in field activities;
4. Facility Contingency Plan;
5. EPA Standard Operating Safety Guide (1984);
6. OSHA regulations particularly in 29 CFR 1910 and 1926;
7. State, local, and other federal agency (e.g., DOT, DOE) regulations; and,
8. Other state or federal guidance as provided.

B. The Health and Safety Plan shall include:

1. Facility description including availability of resources such as roads, water supply, electricity and telephone service;
2. Description of known hazards and evaluation of the risks associated with each activity conducted;
3. List of key personnel and alternates responsible for site safety and public health;
4. Delineation of work areas (e.g., exclusion zone, contamination reduction zone, and support zone), boundaries, size of zones, distance between zones, and access control points into each zone;
5. Description of levels of protection to be worn by personnel in work areas and criteria for selecting the proper level of protection;
6. Procedures to control site access by unauthorized personnel;
7. Programs for periodic air monitoring, medical surveillance for on-site personnel, and environmental sampling;



8. Consideration of weather and other conditions which may affect the health and safety of personnel during site investigations and remedial activities;
9. Specify any routine and special training for field personnel;
10. Description of decontamination procedures for personnel and equipment;
11. Site emergency procedures, for example, escape routes, signals for evacuating work parties, emergency communications (internal and external) procedures for fire and/or explosions, etc.; and,
12. Determine location of, and make arrangements with, the nearest medical facility (and medical life squad unit) for emergency medical care for routine-type injuries and toxicological problems. Telephone numbers of emergency medical facilities and personnel should be included in the Health and Safety Plan.

**APPENDIX D**  
**MONITOR WELL SPECIFICATIONS AND CERTIFICATION FORMS**

THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of Permittee:

Name of Facility:

Location:

NJPDES Number: NJ00

or ECRA Case Number:

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: \_\_\_\_\_

This number must be permanently affixed to the well casing.

Longitude (to nearest second):

West \_\_\_\_\_

Latitude (to nearest second):

North \_\_\_\_\_

Elevation of Top of Inner Casing (cap off)  
(one-hundredth of a foot):

Source of elevation datum (benchmark, etc.)  
and elevation (If an alternate datum has  
been approved by the Department, identify  
here and give approximated elevation):

Source: \_\_\_\_\_

Elev.: \_\_\_\_\_

Owners Well Number (As shown on  
application or plans): \_\_\_\_\_

Elevations are to be determined by double run, three wire leveling methods using balanced sights, commencing from a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft x (mile)<sup>1/2</sup>. For sections less than 0.1 mile, let miles = 0.1.

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

SEAL

PROFESSIONAL LAND SURVEYOR'S NAME  
(Please print or type)

PROFESSIONAL LAND SURVEYOR'S LICENSE #

**MONITORING WELL CERTIFICATION - FORM A - AS-BUILT CERTIFICATION**

(One form must be completed for each well)

Name of Permittee:

Name of Facility:

Location:

NJPDES Permit No.: NJ00

or ECRA case No.:

**CERTIFICATION**

Well Permit Number (As assigned by NJDEP's

Bureau of Water Allocation: \_\_\_\_\_

Owner's Well Number (As shown on the  
application or plans): \_\_\_\_\_

Well Completion Date: \_\_\_\_\_

Distance from Top of Casing (cap off) to  
ground surface (one-hundredth of a foot): \_\_\_\_\_

Total Depth of Well to the nearest 1/2 foot: \_\_\_\_\_

Depth to Top of Screen From Top of Casing  
(one-hundredth of a foot): \_\_\_\_\_

Screen Length (or length of open hole) in feet: \_\_\_\_\_

Screen or Slot Size: \_\_\_\_\_

Screen or Slot Material: \_\_\_\_\_

Casing Material: (PVC, Steel or Other-Specify): \_\_\_\_\_

Casing Diameter (inches): \_\_\_\_\_

Static Water Level From Top of Casing at the Time  
of Installation (one-hundredth of a foot): \_\_\_\_\_

Yield (gallons per minute): \_\_\_\_\_

Development Technique (specify) \_\_\_\_\_

Length of Time Well is Developed/

Pumped or Bailed: \_\_\_\_\_

Lithologic Log: \_\_\_\_\_

\_\_\_\_\_  
Hours Minutes  
Attach**Authentication**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

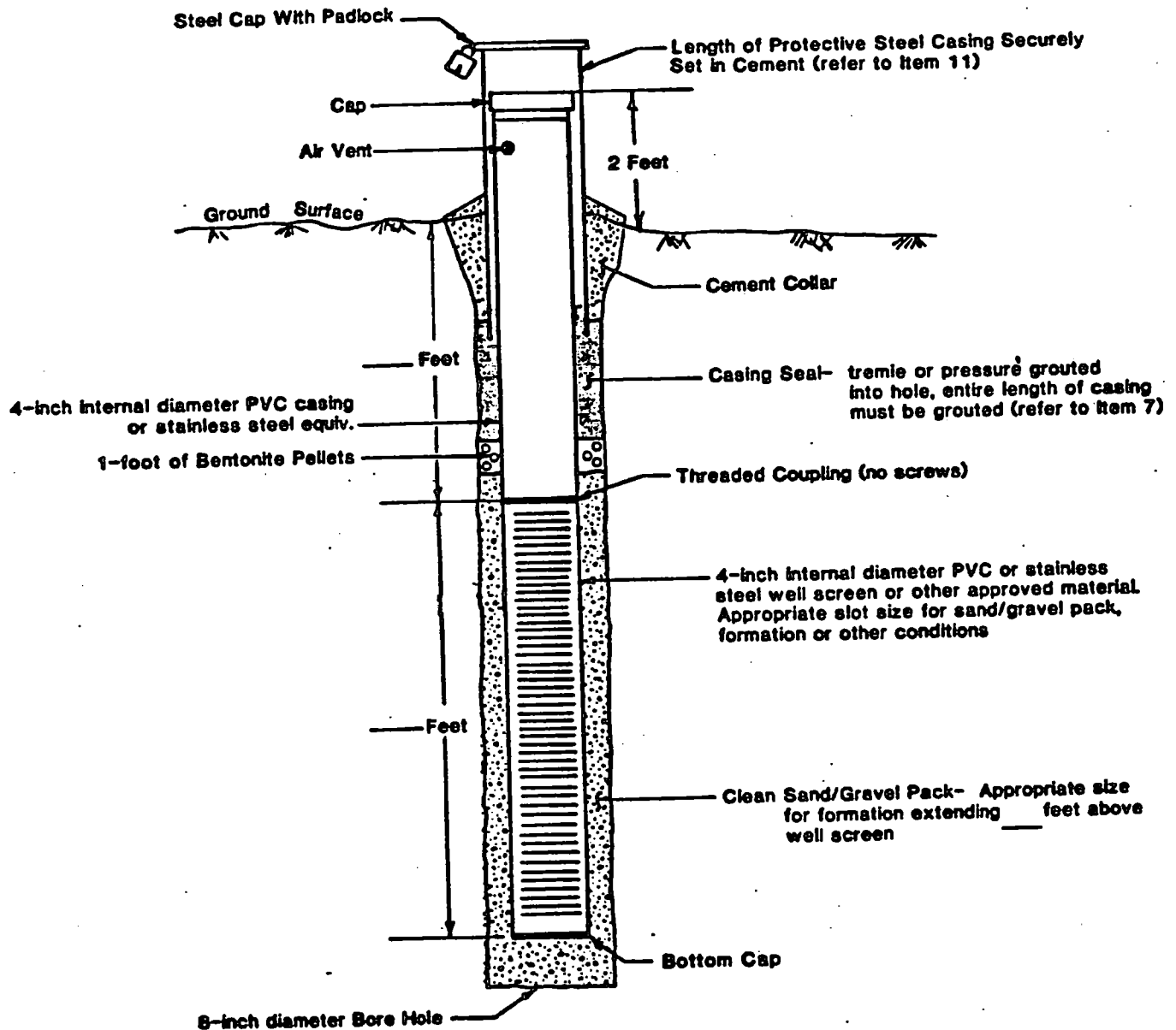
\_\_\_\_\_  
Name (Type or Print)\_\_\_\_\_  
Signature\_\_\_\_\_  
Seal\_\_\_\_\_  
Certification or License No.**Certification by Executive Officer or Duly Authorized Representative**\_\_\_\_\_  
Name (Type or Print)\_\_\_\_\_  
Signature\_\_\_\_\_  
Title\_\_\_\_\_  
Date

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
MONITOR WELL SPECIFICATIONS FOR  
UNCONSOLIDATED FORMATIONS

SITE NAME : \_\_\_\_\_

LOCATION : \_\_\_\_\_

DATE : \_\_\_\_\_



NOT TO SCALE

rev. 9/87

## MONITORING WELL CONSTRUCTION AND GROUTING SPECIFICATIONS FOR UNCONSOLIDATED FORMATIONS

1. Notification to the NJDEP is required two weeks prior to drilling.
2. State well permits are required for each monitoring well constructed by the driller. The well permit tag must be permanently affixed to each monitoring well.
3. Copies of the site specific well specifications must be maintained at the drilling site by the driller.
4. The monitoring well must be installed by a New Jersey licensed well driller.
5. Monitoring well design must conform with NJAC 7:9-7, 8, and 9.
6. The borehole diameter must be a minimum of 4 inches greater than the casing diameter.
7. Acceptable grouting materials are:
  - Neat Cement - 6 gallons of water per 94 pound bag of cement.
  - Bentonite - 1 gallon of water per 1.5 pounds of bentonite.
  - Cement-Bentonite - 8 gallons of water to 5 pounds of bentonite dry mixed per 94 pound bag of cement.
  - Cement-Bentonite - 10 gallons of water per 8 pounds of bentonite water-mixed with a 94 pound bag of cement.
  - Non-expandable cement - 7.5 gallons of water per 1/2 teaspoon of aluminum hydroxide mixed with 4 pounds of bentonite and 94 pounds of cement.
8. Potable water must be used for mixing grouting materials and drilling fluids.
9. Only threaded joints are acceptable as couplings.
10. The driller must maintain an accurate written log of all materials encountered, record construction details for each well, and record the depth of water bearing zones. This information must be submitted to the Bureau of Water Allocation as required by N.J.S.A. 58:4A.
11. A length of protective steel casing with a locking cap must be securely set in cement around the well casing. Flush mount monitoring wells are acceptable provided they have manholes, locking caps, and seals to prevent leakage of surface water into the well.
12. Top of each well casing (excluding cap) must be surveyed to the nearest 0.01 foot by a New Jersey licensed surveyor. The survey point must be marked on each well.
13. Wells must be developed to a turbidity-free discharge.
14. Modifications to designs are allowed only with NJDEP approval.

### Additional requirements (if checked):

Split spoon samples (     ) \_\_\_\_\_

Other (     ) \_\_\_\_\_

Borehole geophysical logs (     ) \_\_\_\_\_

Top of screen set \_\_\_\_\_ feet above/below water table

Dedicated bailer (sampler) in well (     ) \_\_\_\_\_

### Notice is hereby given of the following:

Review by the Department of well locations and depths is limited solely to review for compliance with the law and Department rules.

The Department does not review well locations or depths to ascertain the presence of, nor the potential for, damage to any pipeline, cable, or other structures.

The permittee (applicant) is solely responsible for the safety

and adequacy of the design and construction of monitoring well(s) required by the Department.

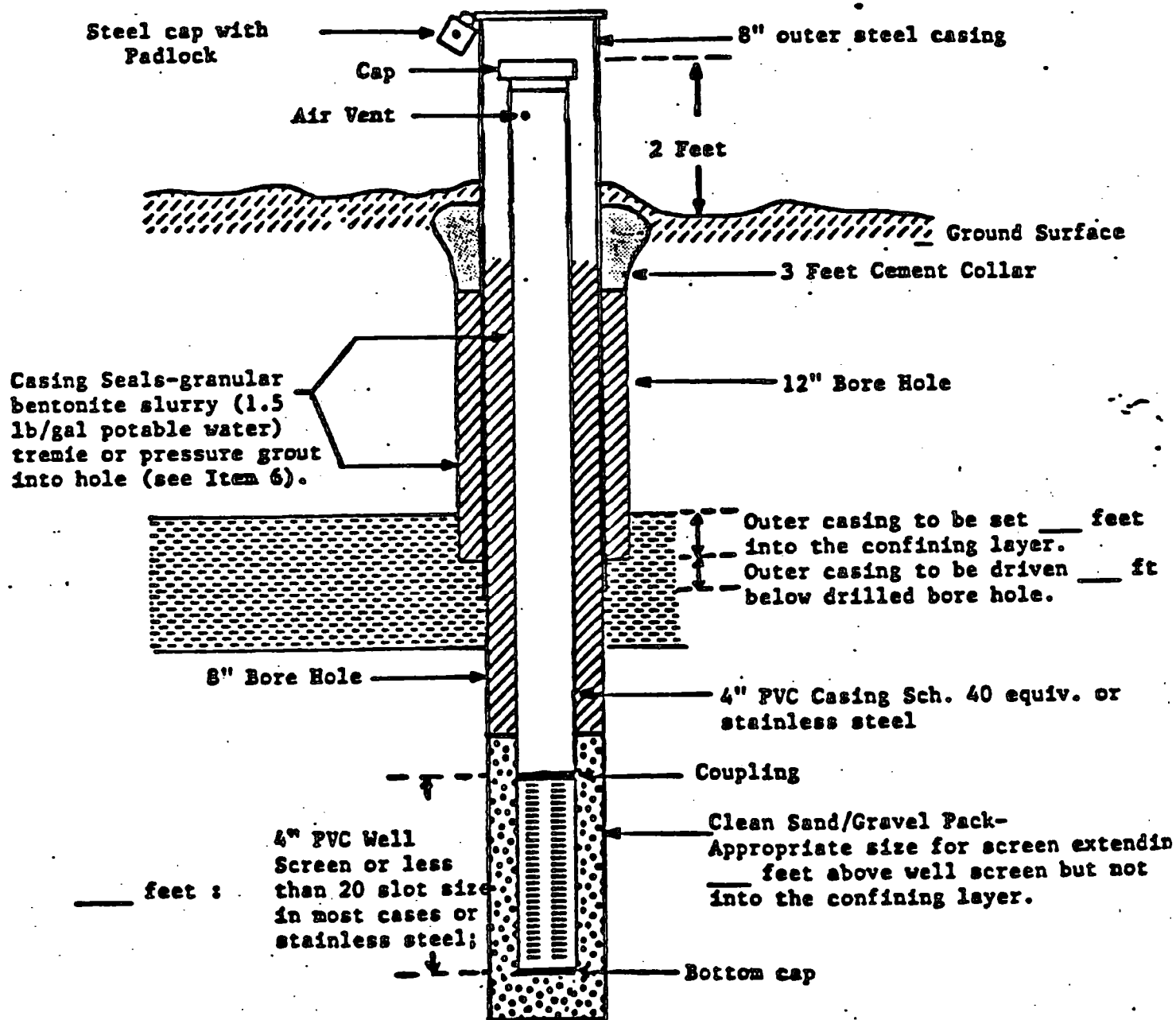
The permittee (applicant) is solely responsible for any harm or damage to person or property which results from the construction or maintenance of any well; this provision is not intended to relieve third parties of any liabilities or responsibilities which are legally theirs.

# New Jersey Department of Environmental Protection Unconsolidated Monitor Well Specifications For Confined Aquifers

Site Name: \_\_\_\_\_

Location: \_\_\_\_\_

Date: \_\_\_\_\_



## REQUIREMENTS:

1. Notification to the NJDEP is required two (2) weeks prior to drilling.
2. State well permits are required for each monitor well constructed by the driller. Report "use of well" on well permit application. Permit numbers must be permanently affixed to each monitor well.

3. All bore holes must be a minimum of four (4) inches greater in diameter than the immediate casing it surrounds.
4. Wells must be gravel packed unless noted otherwise in Additional Requirement 7, and under no circumstances is the gravel pack to penetrate a confining layer.
5. Approved high grade sodium base, well sealant type, granular bentonite must be used to seal all casings. Casing sealant, drilling fluids and cement must be mixed with potable water.
6. The bore hole for the outer steel casing is to be drilled and the casing driven, grouted and allowed to set prior to drilling through any confining layer.
7. The grout for the inner PVC cased well must extend to the ground surface.
8. The cement collar should be installed one (1) hour after the inner casing seal has been emplaced and not while the outer casing seal is setting.
9. All wells must be developed upon completion for a minimum of one (1) hour or to yield a turbid free discharge.
10. The driller must maintain an accurate written log of all materials encountered in each hole, record all construction details for each well, the static water levels, and any tidal fluctuations (where applicable). This information must be submitted to the Office of Water Allocation as required by N.J.S.A. 58:4A.
11. If low level organic compounds are to be sampled for, only threaded or press joints (no glue joints) are acceptable for PVC.
12. The top of the inner PVC casing (excluding cap) must be surveyed to the nearest hundredth foot (0.01) by a licensed surveyor. The inner casing must be permanently marked at the point surveyed. The well should be numbered clearly on the outer casing. A detailed site map with the well locations and casing elevations must be submitted to \_\_\_\_\_.

12. NOTICE IS HEREBY GIVEN OF THE FOLLOWING:

- a. Review by the Department of well locations and depths is limited solely to review for compliance with the law and Department rules;
- b. The Department does not review well locations or depths to ascertain the presence of, nor the potential for, damage to any pipeline, cable or other structure;
- c. The permittee (applicant) is solely responsible for safety and adequacy of the design and construction of wells required to be constructed by the Department;
- d. The permittee (applicant) is solely responsible for any harm or damage to person or property which results from the construction or maintenance of any well; this provision is not intended to relieve third parties of any liabilities or responsibilities which are legally theirs.

ADDITIONAL REQUIREMENTS (IF CHECKED):

- ☐ 1. Split Spoon Samples \_\_\_\_\_
- ☐ 2. Dedicated Bailer (Sampler) in Well(s) \_\_\_\_\_
- ☐ 3. Threaded or Press Joints \_\_\_\_\_
- ☐ 4. Five (5) Foot Casing Tailpiece Below Screen \_\_\_\_\_
- ☐ 5. Centralizers on Screen \_\_\_\_\_
- ☐ 6. Bore Hole Geophysical Logs \_\_\_\_\_
- ☐ 7. Other \_\_\_\_\_

\* OTHER MATERIALS, DESIGNS AND CASING DIAMETERS MAY BE USED WITH PRIOR APPROVAL BY THE NJDEP.



**APPENDIX E**  
**DETECTION MONITORING PROGRAM**

**I. Requirements of the Detection Monitoring Program**

- A. The Permittee must propose which Solid Waste Management Units (SWMUs) and other areas of concern listed in Part VI, Section IIA1a and b, respectively, should be included in a New Jersey Pollutant Discharge Elimination System (NJPDES) Detection Monitoring Program. The Permittee shall also propose which SWMUs and other areas of concern which should not be included in a Detection Monitoring Program, including justifications for this determination. The proposals should be based on the findings of the RCRA Facility Investigation (RFI), which is summarized in the RFI Report, and comments contained within the Department's letter approving the RFI Report.
- B. The Permittee must submit an annual Detection Monitoring Program Report, which contains analyses and summaries of the yearly results and statistical testing for each monitored unit in the Detection Monitoring Program. At this time, the Permittee may propose, with appropriate justification, any modifications in the current Detection Monitoring Program. Proposed minor modifications (see N.J.A.C. 7:14A-2.14) to the Detection Monitoring Program can be approved by the Department, in writing, without a major modification (see N.J.A.C. 7:14A-2.12) of the permit.
- C. Pursuant to N.J.A.C. 7:14A-6.15(i)7, the Permittee is required to perform statistical analyses on some portion of, or all the data collected in the Detection Monitoring Program to determine the occurrence of any statistically significant increases (or pH decreases) over background levels for waste specific parameters. Based on the findings of the RFI, the Permittee must propose parameters for statistical analysis at each unit in the Detection Monitoring Program, which are indicative of the contaminants within the monitored unit(s).
- D. Pursuant to N.J.A.C. 7:14A-6.15(i)8, if the Permittee determines, in accordance with N.J.A.C. 7:14A-6.15(h)8, that a statistically significant increase in the chosen parameters has occurred and has been confirmed in the compliance wells, the Permittee shall comply with the requirements set forth in N.J.A.C. 7:14A-6.15 et seq., which includes, but is not limited to, the following:

1. written notification to the Department within seven (7) days of determination that a NJPDES Discharge to Ground Water (DGW) unit in the Detection Monitoring Program is affecting ground water quality;
2. immediately resample the ground water in all wells surrounding the unit, including background, and determine the concentration of all constituents identified in N.J.A.C. 7:26-8.16 and other permit-limited pollutants which, according to the RFI Report, are present in the ground water;
3. establish a background value for each hazardous constituent identified in N.J.A.C. 7:26-8.16 that has been found at the compliance wells;
4. within forty-five (45) days, submit to the Department an application for a permit modification to establish a Compliance Monitoring Program, meeting the requirements of N.J.A.C. 7:14A-6.15(j). The application must include the following:
  1. the identification and concentration of any N.J.A.C. 7:26-8.16 constituent found in the ground water at each monitoring well; and,
  2. any proposed changes to the ground water monitoring system at the DGW unit, including additional monitoring wells, sampling parameters and sampling frequency, necessary to meet the requirements of N.J.A.C. 7:14A-6.15(j). The determination of whether the changes in the ground water monitoring system, as proposed by the Permittee, meet the requirements of N.J.A.C. 7:14A-6.15(j), shall be made by the Department in writing.
5. within ninety (90) calendar days, submit to the Department an engineering feasibility plan for a Corrective Action Program necessary to meet the requirements of N.J.A.C. 7:14A-6.15(k) and 7:9-6.5(b).
6. if the Permittee determines that a source other than the Discharge to Ground Water (DGW) unit caused the statistically significant increase in an indicator parameter(s), or that the increase resulted from an error in sampling, analysis, or evaluation, the Permittee shall:
  1. notify the Department in writing within seven (7) days of determining that a statistically

significant increase of an indicator parameter(s) has occurred at the compliance point;

2. within forty-five (45) days, submit a report to the Department which demonstrates that a source other than the DGW unit caused the increase, or that the increase resulted from an error in sampling, analysis, or evaluation;
3. within forty-five (45) days, submit to the Department an application to make any appropriate changes to the ground water monitoring system at the DGW unit; and,
4. continue to monitor at the DGW unit in accordance with the Detection Monitoring Program.

**\*NOTE:** The Permittee is not relieved of the requirement to submit a permit modification application within the same time specified in Appendix E, Section ID4 and 5, above, unless the demonstration successfully shows that a source other than the DGW unit or a procedural error caused the statistically significant increase.

- F. Pursuant to N.J.A.C. 7:9-6.4(i) and 7:9-6.6, the Department would not require the Permittee to submit an application for a compliance monitoring program or corrective action program for exceeding ground water protection standards or for the failure of statistical tests that the permittee can demonstrate to be due to natural conditions. In order to make this demonstration, the Permittee must submit a written report to the Department for review and approval. The report must be submitted within thirty (30) calendar days after the due date for the data which resulted in the exceedance of the standard or statistical failure. The Department will issue a written statement on the determination of whether or not the report successfully shows that natural conditions caused the exceedance or failure.
- G. Requirements set forth in Appendix B (RFI Scope of Work) and Appendix C (RFI Supporting Plans) must be included within and followed in all phases of the Detection Monitoring Program. This includes, but is not limited to, project management, data management, data collection and quality assurance, and health and safety plans.

## II. Contents of DGW Detection Monitoring Program

## A. The draft Detection Monitoring Program must include the following:

1. A proposed list of SWMUs and other areas of concern (see Part VI, Section IIA1a and b) that the Permittee believes should be included in a Detection Monitoring Program, and a list of SWMUs and other areas of concern that should not be included in a Detection Monitoring Program, including detailed justifications supporting these decisions;
2. An adequate ground water monitoring system for each unit proposed in the Detection Monitoring Program. At a minimum, the monitoring systems must be capable of:
  - a. representing the background ground water quality passing underneath a DGW unit;
  - b. immediately detecting a release of pollutants from the DGW unit; and,
  - c. determining the direction and rate of ground water movement.
3. Assurance that the data generated in the Detection Monitoring Program are sufficient in quality and quantity to accurately assess the impact of the DGW unit on ground water quality. Proposals for ground water monitoring systems at each DGW unit should, at a minimum, include the following information:
  - a. project management, data management, data collection and quality assurance, and health and safety plans (should be adapted from Appendix C, RFI Supporting Plans);
  - b. number, location, and characteristics (e.g., length, depth of well screen) of downgradient (compliance) and upgradient (background) wells;
  - c. parameters and frequency of sampling; and,
  - d. parameters to be used in statistical analysis.

## B. Based on the findings of the RCRA Facility Investigation (RFI) Report, the Permittee must propose

specific waste parameters for statistical analysis at each DGW unit, which are indicative of the operations conducted at the specific DGW unit. In addition, the Permittee is required to:

1. determine whether a statistically significant increase at compliance monitoring points (downgradient wells) for each indicator parameter at all DGW units has occurred;
2. develop a "Trigger Value" for each waste indicator parameter, which represents the Limit of Quantification\* (LOQ) for that designated compound;
3. report, upon each sampling event, the concentration for each waste indicator parameter and compare it to its Trigger Value in all compliance wells. Waste indicator parameters which are detected in compliance wells at greater concentrations than their Trigger Value must be compared to the background well concentration using the Cochran's Approximation to the Behrens-Fisher Student's t-test as required by N.J.A.C. 7:14A-6.15(h)8i and set forth in Appendix IV of 40 CFR 264. The Permittee is recommended to evaluate other statistical procedures appropriate to the data which may afford a more accurate representation of the ground water quality (see Federal Register v.53, n.196, for additional guidance). In addition, the Permittee may concurrently perform an alternate statistic on the same data. If the Permittee is able to document, with supporting justification, that the accuracy and appropriateness of its statistical methods exceeds that prescribed in this permit, the permit may be modified to incorporate the Permittee's proposed alternate statistic(s). The Department reserves the right to require the use of the CABF Student's t-test for any indicator parameter, based upon the Department's professional opinion that the DGW unit may be affecting ground water quality;
4. establish a background data set of a sufficient data base, defined in N.J.A.C. 7:14A-6.15(h)7 as being a minimum of 16 data points. If a background data set for any waste indicator parameter(s) found in excess of its trigger value does not yet exist, samples may be collected at an accelerated rate of four background samples per month until 16 data points are achieved. In this case, the result of the statistical test must be reported within 60 days of obtaining the necessary

background data set;

5. use a method of signs for the waste indicator parameters detected in compliance wells at concentrations less than the trigger values. The detected values shall be compared to the background concentrations of the indicator parameter using a method of signs (+ for >, - for <) approach as described in RCRA PERMIT WRITER'S MANUAL FOR GROUND WATER PROTECTION (10/4/83). If a background data set for a waste indicator parameter does yet not exist, downgradient concentrations shall be compared using signs (+ or -) to upgradient concentrations reported for the same period; and,
6. submit all analytical results, along with a summary report showing the results of the waste indicator parameters in relation to their Trigger Values and statistical testing for significant increases must be submitted to the Department's Bureau of Ground Water Pollution Abatement for each sampling period, following the schedule set forth in the Detection Monitoring Program.

**\*NOTE:** The American Chemical Society (ACS) defines the Limit of Quantification (LOQ) and its relationship to the Method Detection Limit (MDL) (ACS, Principal of Environmental Analysis, J. Analytical Chemistry 55:2210-2218, 1983) as the minimum concentration which can be quantified as an unknown in a production laboratory using the stated methods. The MDL from which the "Trigger Value" is obtained is derived from the USEPA published detection limits (40 CFR 136), Method 624 for volatile organic compounds and Method 625 for base/neutral and acid extractable compounds.

C. To insure the integrity of the Detection Monitoring Program, the Permittee is required to:

1. complete the forms required on the "Monitoring Report-Transmittal Sheet" (Form T-VWX-014), which is included as part of this permit and must be submitted as a cover page for the report forms. Failure to submit sampling data on the forms shall be considered a violation of the sampling requirements of this permit and may subject the Permittee to civil and administrative penalties pursuant to N.J.S.A. 58:10A-10. It shall be solely the Permittee's responsibility to maintain an adequate supply of the required report forms. The original copy of the report forms, with the proper signatures on the transmittal sheet, shall be sent to:

- a. NJ Department of Environmental Protection and Energy  
Ground Water Quality Management Element  
Bureau of Aquifer Protection  
CN-029  
Trenton, NJ 08625-0029  
ATTN: Monitoring Well Reports

A complete copy of the entire report, including QA/QC Package, shall be sent to:

- b. NJ Department of Environmental Protection and Energy  
Ground Water Quality Management Element  
Bureau of Ground Water Pollution Abatement  
CN-029  
Trenton, NJ 08625-0029  
ATTN: DARYL CLARK

2. Complete Ground Water Monitor Well Certification (Forms A and B, provided in Appendix D) for each existing and proposed monitoring wells. Information for each well must shown on separate forms and submitted to the two above addresses within forty-five (45) days of installation. For an existing well, if the information required on the Ground Water Certification Forms A and B can not be determined or if any well is not adequately constructed, the Department reserves the right to require the replacement of that well. Criteria to be used by the Department in judging the adequacy of a well will be related to the ability of the well to provide a representative ground water sample from the portion of the aquifer the Department requires to be sampled. Replacement wells must be installed within ten (10) feet of the existing well. Inadequate or damaged wells must be properly sealed pursuant to N.J.A.C. 58:4A-4.1;
3. Inspect each ground water monitoring well on a monthly basis for damage (high traffic areas should be inspected weekly). The Permittee shall maintain a complete inspection record indicating dates of inspection, inspector's name, and conditions observed. These records shall be made available to the Department upon request. Failure to maintain or submit well-inspection records upon request shall be a violation of the conditions of this permit;
4. If any monitoring wells are damaged or otherwise rendered inadequate for their intended purpose, the Bureau of Ground Water Pollution Abatement shall be notified within five (5) days in writing indicating:
  - a. which wells were damaged or rendered

inadequate for their intended use;

- b. the cause and extent of damage or reason for inadequacy;
- c. if the sampling schedule as required in this permit will be violated or if the results of the sampling may reasonably become misleading;
- d. the date that the well will again be operational. Damaged wells must be replaced or repaired within 60 days after the damage has occurred. If any of the following situations have occurred, redeveloped or replacement wells must be sampled not prior to 14 days after development but no later than 28 days after installation:

Situation 1: Wells have been damaged in a way that affected the quality of previously taken ground water samples.

Situation 2: Due to damage to a well a regularly scheduled sampling event has been missed.

Note: Wells in Situation 1 above that do not have to be redeveloped (only purged) must be sampled within five days of the discovery of the damage. If the next regularly scheduled sampling for the well(s) is within 21 days of the last day the well(s) should be sampled under 1 and 2 above, only the regular sampling event is required.

- e. the date that the well will be sampled.
- 5. take any reasonable steps necessary to limit public access to monitoring or recovery wells, treatment systems, or any other potentially harmful or easily-damaged equipment on the site by constructing fences, barricades, or any other structures or means necessary to restrict access to the equipment. The Permittee shall maintain the said structures;
  - 6. sample the monitoring wells in order of least to most contaminated unless dedicated purging and sampling equipment are used for all wells: and,



7. submit Quality Assurance/Quality Control Packages and any other monitoring data for each sampling event to the Bureau of Ground Water Pollution Abatement at the address listed above.

### III. Contents of Detection Monitoring Program Report

- A. The annual Detection Monitoring Program Report must, at a minimum, include the following [at each Discharge to Ground Water (DGW) unit]:
  1. an assessment of the adequacy of the ground water monitoring system, including appropriate changes to the existing monitoring program;
  2. summary and discussion of the data, including statistical testing and trends;
  3. summary table of all waste indicator parameters, associated trigger values, and the concentrations of the indicator parameters for each sampling event;
  4. need for remedial investigations or actions, such as Interim Remedial Measures (IRM), Corrective Measures Study (CMS), Compliance Monitoring, or Corrective Action; and,
  5. proposals, with appropriate justifications, for permit modifications. The Department shall evaluate any proposed permit modifications in terms of the criteria set forth in N.J.A.C. 7:14A-6.15(d)2i.(1-9) and ii.(1-10).
- B. Guidelines for the presentation, discussion, and assessment of data, outlined in Appendix B, Section IV, Contents of the RCRA Facility Investigation (RFI) Report, should be followed in the annual DGW Detection Monitoring Program Report.

**APPENDIX F**  
**CORRECTIVE MEASURES STUDY: SCOPE OF WORK**

**I. Requirements of Corrective Measures Study**

- A. Identify and list all potentially viable corrective measure alternatives for the pollution at and/or emanating from the site;
- B. Develop alternatives to incorporate corrective measure technologies into a comprehensive, site-specific approach;
- C. Describe, evaluate and compare corrective measure alternatives;
- D. Develop site specific objectives based on the results of the RCRA Facility Investigation, EPA and NJDEP guidance, and any applicable State and Federal Statutes. Corrective actions concerning ground water releases must be consistent with those required under 40 CFR Part 264.100 and N.J.A.C. 7:14A-6.15. These objectives must include, but are not limited to, site specific versions of the following:
  - 1. Clean up pollution at and/or emanating from the site in as short a time period as possible;
  - 2. Achieve and maintain applicable surface water and ground water quality standards pursuant to N.J.A.C. 7:14A-1 et seq., 7:9-5, 7:9-6, and guidelines established by the Department. The Department will issue site specific Ground Water Protection Standards to be used in development of this CMS. These standards will be included in the Department's final approval of the RFI report;
  - 3. Effectively remediate damage to and provide protection of human health and the environment; and
  - 4. Any additional site specific concerns of the permittee and any listed in the specific requirements section of Part V of this permit.
- E. Recommend and justify the most environmentally sound corrective action alternative which will meet the objectives of Section I.D., above, in a timely manner.

## II. Contents of Corrective Measures Study Work Plan

- A. A statement of the requirements for the corrective measures study pursuant to Section I., above
- B. A detailed schedule for all Corrective Measures Study activities. In the approvable version of the CMS Work Plan this schedule may be expressed in terms of number of days after the permittee's receipt of the Department's written approval of the CMS Work Plan. However within a certain number of days after receipt of this approval, the permittee must submit an addendum to the plan stating what the specific due dates for these activities are. The due date for submittal of this addendum will be specified in the Department's final written approval of the CMS Work Plan. At a minimum the scheduled activities must include:
  - 1. Key interim dates in the CMS such as initiation and completion of any field activities, treatability studies, pilot treatment projects, etc.;
  - 2. Dates for submission of all permit applications or local government approvals required for completion of CMS; and
  - 3. Date for submission of CMS report to the Department.
- C. A list of all potentially viable corrective measure alternatives to be considered.
- D. A presentation of initial screening procedure in accordance with the following:
  - 1. Screen all potentially viable corrective measure alternatives to narrow the list of potential alternatives for further detailed analysis.
  - 2. Initial screening criteria.
    - a. environmental and human health and safety impacts.
    - b. eliminate alternatives that may prove infeasible to implement, rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measures objectives within a reasonable time period.
  - 3. All alternatives shall be retained that are capable of permanently remediating all

environmental and human health and safety concerns at and/or emanating from the site within a reasonable time period

- E. A presentation of characteristics to be used to describe corrective measure alternatives remaining after initial screening in accordance with the following:
1. Describe appropriate treatment and disposal technologies, as well as any permanent facilities, easements, right of ways, or accesses required;
  2. Specify engineering considerations required to implement the alternative (e.g., treatability study, pilot treatment facility, ease of installation, relative sizing and type of construction for buildings and structures, utilities required, locations of underground utilities, etc.);
  3. Describe environmental and human health impacts and propose methods for mitigating or eliminating any adverse impacts;
  4. Describe operation, maintenance, and monitoring requirements of the completed remedy at least in terms of complexity, frequency, duration, labor, materials needed, etc.;
  5. Describe off-site disposal needs and transportation plans;
  6. Describe temporary storage requirements;
  7. Describe requirements for health and safety plans during remedial implementation (including both on-site and off-site health and safety considerations);
  8. Describe how the alternative could be phased into individual operable units, including how various components of the remedy could be implemented individually or in groups, resulting in a functional phase in of the overall remedy;
  9. Describe how alternatives(s) could be segmented into areas to allow implementation of differing phases of the alternative;
  10. Describe how alternatives could be combined to create more effective alternatives;

11. Describe which Federal, State and local permits would be necessary for each alternative identified and outline the information necessary for the development of each of the permit applications;
  12. Describe the time required for implementation, including significant interim dates; and
  13. Specify preliminary process flow sheets for each alternative.
- F. A detailed discussion of procedures to evaluate and compare the corrective measure alternatives that remain after the initial screening in accordance with the following:
1. Evaluate each alternative in accordance with site specific objectives which are based on the requirements referenced in Section I. D., above, and the following characteristics:
    - a. level of cleanup achievable, where cleanup is defined as the reduction of contaminants to some acceptable, pre-established level;
    - b. expected time-frame of observable beneficial results and anticipated time needed to achieve cleanup;
    - c. feasibility; which at least includes effectiveness, ability to design a monitoring system to demonstrate the effectiveness, useful service life of the corrective measures components, and future availability of resources (ex. labor and materials) required for corrective measure to function;
    - d. implementability; which includes at least ease of installation and consideration of the time required to implement an alternative;
    - e. reliability; where alternatives requiring complex and frequent operation and maintenance (O&M) activities are considered less reliable than ones with little and straightforward O&M activities;
    - f. ability to minimize adverse impacts caused by implementation/operation of alternative (ex. failure of technology or component causing immediate impact to a receptor) and maximize flexibility of corrective measure to deal with uncontrollable changes at the site;

- g. ability to minimize off-site impacts caused by implementation/operation of the alternative;
  - h. usability of ground water after operation/completion of alternative;
  - i. usability of surface water after operation/completion of alternative;
  - j. usability of site after operation/completion of alternative;
  - k. legal constraints, specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on design, operation, and timing of each alternative.
2. Compare each alternative in accordance with the requirements and characteristics identified in Section II.F.1. above.
- G. Presentation of procedure concerning recommendation and justification of corrective measure alternative in accordance with the following:
- 1. Based on the detailed evaluation process of II. F above, recommend the most environmentally sound corrective measure alternative which will, in the most timely manner, meet the site specific objectives developed from Section I. D. above;
  - 2. Prepare a detailed justification for recommending the remedial action alternative stating the advantages over other alternatives considered. At a minimum the following criteria must be used to justify the corrective measure or measures which:
    - a. are most effective at performing their intended functions and maintaining the performance over extended periods of time;
    - b. do not require frequent or complex operation and maintenance activities and have been proven effective under waste and facility conditions similar to those anticipated at the site;
    - c. can be constructed and operated to reduce levels of contamination to attain applicable standards in the shortest period of time;

- d. pose the least threat to safety of nearby residents and environments as well as workers;
  - e. comply with existing NJDEP and USEPA criteria, standards, or guidelines for the protection of human health and provide the minimum level of exposure to contaminants and maximum reduction in exposure over the shortest period of time; and
  - f. pose the least adverse impact (or the greatest improvement) on the environment over the shortest period of time.
3. Prepare a conceptual design of the recommended alternative including:
- a. engineering and hydrogeologic approaches;
  - b. implementation schedules;
  - c. any special implementation requirements such as pilot studies;
  - d. applicable design criteria;
  - e. preliminary site layout(s);
  - f. operation and maintenance requirements;
  - g. a description of how the effectiveness of the corrective measure alternative will be demonstrated. For ground water corrective action programs, this must include a ground water monitoring program designed pursuant to N.J.A.C. 7:14A-6.15(k)4.
  - h. health and safety considerations.

### III. Content of Corrective Measures Study Report

- A. Brief Description of Facility and RFI results.
  - 1. Include a topographic map of entire site.
- B. Detailed discussion of initial screening of corrective measures alternatives according to the approved CMS Work Plan.
- C. Detailed description of corrective measure alternatives that remain after initial screening according to the approved CMS Work Plan.

1. Maps showing preliminary locations and layouts of corrective measure alternative components on site.
- D. Detailed evaluation and comparison of corrective measures alternatives as required by CMS Work Plan and based on the descriptions presented pursuant to C. above.
1. Table(s) showing comparison of alternatives based on relative times required for implementation and achievement of final cleanup as well as relative probability of meeting numerical cleanup standards for respective media.
- E. Recommendation and justification of the most environmentally sound corrective measure alternative which meets the site specific objectives in the most timely manner and according to the approved CMS Work Plan.
- F. Conceptual design of recommended corrective measure alternative.
- G. Outline of additional information required and/or specific field data needed to complete evaluation.
- H. List of all references used in corrective measure study.



## GROUND WATER ANALYSIS - VOLATILE ORGANICS REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. \_\_\_\_\_

FACILITY NAME

LENOX CHINA

SW ID NO. \_\_\_\_\_

LAB NAME \_\_\_\_\_

NJPDDES NO.

NJ 0 0 7 0 3 4 3

WELL PERMIT NO.

- - - - -

SAMPLE DATE  
YR. MO. DAY

- - - - -

NJ LAB CERT. NO.

- - - - -

WQM USE

28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM

MO. YR.

TO MO. YR.

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS												ANALYSIS	UNITS	PARAMETER	VALUE	REMARK
J	F	M	A	M	J	J	A	S	O	N	D					
N	B	R	R	Y	N	L	G	P	T	V	C	ANALYSIS	UNITS	PARAMETER	VALUE	REMARK
X												Acrylonitrile	ug/l	3 4 2 1 5		
X												Benzene	ug/l	3 4 0 3 0		
X												Bromoform	ug/l	3 2 1 0 4		
X												Carbon Tetrachloride	ug/l	3 2 1 0 2		
X												Chlorobenzene	ug/l	3 4 3 0 1		
X												Chlorodibromomethane	ug/l	3 4 3 0 6		
X												Chloroform	ug/l	3 2 1 0 6		
X												1,1-Dichloroethane	ug/l	3 4 4 9 6		
X												1,2-Dichloroethane	ug/l	3 4 5 3 1		
X		X			X					X		1,1-Dichloroethylene	ug/l	3 4 5 0 1		
X												1,2-Dichloropropane	ug/l	3 4 5 4 1		
X												Ethylbenzene	ug/l	3 4 3 7 1		
X												Methylene Chloride	ug/l	3 4 4 2 3		
X												1,1,2,2-Tetrachloroethane	ug/l	3 4 5 1 6		
X												Tetrachloroethylene	ug/l	3 4 4 7 5		
X												Toluene	ug/l	3 4 0 1 0		
X												1,1,1-Trichloroethane	ug/l	3 4 5 0 6		
X												1,1,2-Trichloroethane	ug/l	3 4 5 1 1		
X		X			X					X		Trichloroethylene	ug/l	3 9 1 8 0		
X		X			X					X		Vinyl Chloride	ug/l	3 9 1 7 5		
X												Acrolein	ug/l	3 4 2 1 0		
X												Chloroethane	ug/l	3 4 3 1 1		
X												2-Chloroethyl Vinyl Ether	ug/l	3 4 5 7 6		
X												Bromodichloromethane	ug/l	3 2 1 0 1		
X												1,3-trans-Dichloropropene	ug/l	3 4 6 9 9		
X												Methyl Bromide	ug/l	3 4 4 1 3		
X												Methyl Chloride	ug/l	3 4 4 1 8		
X		X			X					X		1,2-trans-Dichloroethene	ug/l	3 4 5 4 6		
X		X			X					X		cis-1,2-Dichloroethylene	ug/l	8 1 5 7 4		
X												1,2-Dichlorobenzene	ug/l	3 4 5 3 6		
X												1,3 Dichlorobenzene	ug/l	3 4 5 6 6		

## GROUND WATER ANALYSIS - VOLATILE ORGANICS REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO. \_\_\_\_\_

FACILITY NAME	SW ID NO.
LAB NAME	

NJPDDES NO.

WELL PERMIT NO.

SAMPLE DATE  
YR. MO. DAY

NJ LAB CERT. NO.

WQM USE

T

NJ

1

2

8

9

16

17

22

23

27

28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 

MO.	YR.
-----	-----

 TO 

MO.	YR.
-----	-----

SUBMIT WITH SIGNED T-VWX-014

SAMPLING MONTHS												ANALYSIS	UNITS	PARAMETER	VALUE	REMARKS
J	F	M	A	M	J	J	A	S	O	N	D					
A	E	A	P	A	U	U	U	E	C	O	E					
N	B	R	R	Y	N	I	G	P	T	V	C					
												Acrylonitrile	ug/l	3 4 2 1 5		
												Benzene	ug/l	3 4 0 3 0		
												Bromoform	ug/l	3 2 1 0 4		
												Carbon Tetrachloride	ug/l	3 2 1 0 2		
												Chlorobenzene	ug/l	3 4 3 0 1		
												Chlorodibromomethane	ug/l	3 4 3 0 6		
												Chloroform	ug/l	3 2 1 0 6		
												1,1-Dichloroethane	ug/l	3 4 4 9 6		
												1,2-Dichloroethane	ug/l	3 4 5 3 1		
												1,1-Dichloroethylene	ug/l	3 4 5 0 1		
												1,2-Dichloropropane	ug/l	3 4 5 4 1		
												Ethylbenzene	ug/l	3 4 3 7 1		
												Methylene Chloride	ug/l	3 4 4 2 3		
												1,1,2,2-Tetrachloroethane	ug/l	3 4 5 1 6		
												Tetrachloroethylene	ug/l	3 4 4 7 5		
												Toluene	ug/l	3 4 0 1 0		
												1,1,1-Trichloroethane	ug/l	3 4 5 0 6		
												1,1,2-Trichloroethane	ug/l	3 4 5 1 1		
												Trichloroethylene	ug/l	3 9 1 8 0		
												Vinyl Chloride	ug/l	3 9 1 7 5		
												Acrolein	ug/l	3 4 2 1 0		
												Chloroethane	ug/l	3 4 3 1 1		
												2-Chloroethyl Vinyl Ether	ug/l	3 4 5 7 6		
												Dibromochloromethane	ug/l	3 2 1 0 5		
												1,3-trans-Dichloropropene	ug/l	3 4 6 9 9		
												Methyl Bromide	ug/l	3 4 4 1 3		
												Methyl Chloride	ug/l	3 4 4 1 8		
												1,2-trans-Dichloroethene	ug/l	3 4 5 4 6		
												1,2 Dichlorobenzene	ug/l	3 4 5 3 6		
												1,3 Dichlorobenzene	ug/l	3 4 5 6 6		
												1,4 Dichlorobenzene	ug/l	3 4 5 7 1		

VALUE CODING AND REMARK CODES ON REVERSE

29

33 34

40 41

DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY  
DIVISION OF PUBLICLY FUNDED SITE REMEDIATION  
GROUND WATER QUALITY ELEMENT

**MONITORING REPORT - TRANSMITTAL SHEET**

NPDES NO.

REPORTING PERIOD

MO. YR.

MO. YR.

01017013413

THRU

**PERMITTEE:**Name LENOX INCORPORATEDAddress 100 LENOX DRIVELAWRENCEVILLE NJ 08648-2394**FACILITY:**Name LENOX CHINA, A DIVISION OF LENOX INCORPORATEDAddress TILTON ROADPOMONA NJ 08240 (County) ATLANTICTelephone (609 ) 984-9798**FORMS ATTACHED (Indicate Quantity of Each)****SLUDGE REPORTS - SANITARY**☐ T-VWX-007 ☐ T-VWX-008 ☐ T-VWX-009**SLUDGE REPORTS - INDUSTRIAL**☐ T-VWX-010A ☐ T-VWX-010B**WASTEWATER REPORTS**☐ T-VWX-011 ☐ T-VWX-012 ☐ T-VWX-013**GROUNDWATER REPORTS**☒ 18 VWX-015(A,B) ☒ 9 VWX-016 ☐ VWX-017**NPDES DISCHARGE MONITORING REPORT**☐ EPA FORM 3320-1**OPERATING EXCEPTIONS**

	YES	NO
DYE TESTING	<input type="checkbox"/>	<input type="checkbox"/>
TEMPORARY BYPASSING	<input type="checkbox"/>	<input type="checkbox"/>
DISINFECTION INTERRUPTION	<input type="checkbox"/>	<input type="checkbox"/>
MONITORING MALFUNCTIONS	<input type="checkbox"/>	<input type="checkbox"/>
UNITS OUT OF OPERATION	<input type="checkbox"/>	<input type="checkbox"/>
OTHER	<input type="checkbox"/>	<input type="checkbox"/>

*(Detail any "Yes" on reverse side in appropriate space.)***NOTE:** The "Hours Attended at Plant" on the reverse of this sheet must also be completed.

**AUTHENTICATION** - I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

**LICENSED OPERATOR**

Name (Printed) \_\_\_\_\_

Grade &amp; Registry No. \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

**PRINCIPAL EXECUTIVE OFFICER or  
DULY AUTHORIZED REPRESENTATIVE**

Name (Printed) \_\_\_\_\_

Title (Printed) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

# GROUND WATER ANALYSIS - MONITORING WELL REPORT

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

OWNER'S WELL ID NO.

PLEASE TYPE OR PRINT WITH BALLPOINT PEN		SW ID NO.
FACILITY NAME	LENOX CHINA	
LAB NAME		

R NJPDES NO. WELL PERMIT NO. SAMPLE DATE NJ LAB CERT. NO.  
 1 2 8 9 16 17 22 23 27

WQM USE  
☐  
 28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 

MO.	YR.
-----	-----

 TO 

MO.	YR.
-----	-----

SUBMIT WITH SIGNED T-VWX-014

[illegible]

VALUE CODING AND REMARK CODES ON REVERSE

OWNER'S WELL ID NO. \_\_\_\_\_

**NJPDES NO.**

WELL PERMIT NO.

SAMPLE DATE  
YR. MO. DAY

NJ LAB CERT. NO.

WQM USE  
☐  
28

THE SCHEDULE INDICATED BELOW IS TO BE OBSERVED FROM 

MO.	YR.

 TO 

MO.	YR.

**SUBMIT WITH SIGNED T-VWX-014**

VALUE CODING AND REMARK CODES ON REVERSE



**State of New Jersey**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**DIVISION OF WATER RESOURCES**

CN 029  
Trenton, N.J. 08625-0029

(609) 292-1637  
Fax # (609) 984-7938

Office of -  
the Director -

New Jersey Department of Environmental Protection  
Division of Water Resources  
Bureau of Aquifer Protection  
CN-029, Trenton, NJ 08625

**QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PACKAGE**

This package contains sections:

- A. Sampling Collection and Preservation Form  
(including sampling chain of custody and authentication)
- B. Laboratory Sample Chain of Custody/Chronicle
- C. Laboratory Authentication Statement
- D. Laboratory QA/QC Data Forms for:

Organics (VOCs, Base/Neutrals and Acid Extractables)  
Pesticides and PCBs  
Herbicides  
Metals  
Conventional and Non-Conventional Analyses (C/NC)

If there are any questions regarding the completion or submission of the attached forms, call the Bureau of Aquifer Protection at (609) 292-9975.





State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER RESOURCES

CN 029  
Trenton, N.J. 08625-0029

(609) 292-1637  
Fax # (609) 984-7938

Office of  
the Director

**SAMPLING COLLECTION AND PRESERVATION FORM**  
(to be completed by the sampling crew)

**BACKGROUND**

- 1) Facility Name: \_\_\_\_\_
- 2) NJPDES Number: \_\_\_\_\_
- 3) Facility Address: \_\_\_\_\_  
\_\_\_\_\_
- 4) Owner's Name: \_\_\_\_\_
- 5) Owner's Address: \_\_\_\_\_  
\_\_\_\_\_

**SAMPLING PLAN**

- 6) Has a sampling and analysis plan been developed for this facility as stipulated under N.J.A.C. 7:14A-6.9?  
Yes \_\_\_ or No \_\_\_
- 7) If yes, has the sampling plan been approved by the Department? Yes \_\_\_ or No \_\_\_
- 8) If the sampling plan has not been submitted to the Department, attach with these completed forms.

**SAMPLE COLLECTION**

- 9) Sample Date/Time: \_\_\_\_\_ / \_\_\_\_\_
- 10) Sampling Personnel (Name/Title)      Affiliations      Phone  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



- 11) Weather conditions at time of sampling: \_\_\_\_\_  
\_\_\_\_\_
- 12) Is there a designated level of protection, and if so, indicate: A\_\_\_\_, B\_\_\_\_, C\_\_\_\_, or D\_\_\_\_.

STATIC WATER LEVEL MEASUREMENT AND WELL EVACUATION

- 13) What method was utilized to determine the static water level?  
Electrical (m-scope)\_\_\_\_, Stainless Steel Tape\_\_\_\_,  
Sonic\_\_\_\_, or Other\_\_\_\_: (explain)\_\_\_\_\_
- 14) Measuring device precise to:\_\_\_\_\_ (.01 feet)
- 15) Model Number:\_\_\_\_\_ Manufacturer:\_\_\_\_\_
- 16) Was the water level indicator deconed between wells?  
Yes\_\_\_\_ or No\_\_\_\_
- 17) Describe the decontamination procedure:\_\_\_\_\_
- 18) Wells are to be purged three to five times prior to sampling. If wells are not purged as stated above, explain and justify the exact purge method used.  
\_\_\_\_\_  
\_\_\_\_\_
- 19) Method used for well evacuation: Pump\_\_\_\_ or Bailer\_\_\_\_
- 20) If bailed to evacuate, what are the dimensions of the bailer?\_\_\_\_\_
- 21) What is the volume capacity of the bailer?\_\_\_\_\_
- 22) Pump Type: Submersible\_\_\_\_, Bladder\_\_\_\_, Gas Piston\_\_\_\_,  
Gas Displacement\_\_\_\_, or Other\_\_\_\_  
Explain:\_\_\_\_\_
- 23) Pump Model Number/Flow Rate:\_\_\_\_\_
- 24) Pump Manufacturer:\_\_\_\_\_
- 25) Describe decontamination method used to clean the pump between wells:\_\_\_\_\_
- 26) Power Source for Pump: Gasoline Powered Generator\_\_\_\_ or  
Gasoline Powered Compressor\_\_\_\_\_



- 27) Was the gasoline transported in the same vehicle as the sample bottles, field and trip blanks or bailers? Yes\_\_\_\_ or No\_\_\_\_
- 28) Refer to the following chart for volume capacities for various wells per linear foot.

<u>Casing Diameter</u>	<u>Gallons/Linear Foot</u>
2"	0.16
4"	0.65
6"	1.47
8"	2.61

- 29) Complete the below chart regarding evacuation measurements. Please note the following abbreviations: TOC=elevation of top of casing; TDW=total depth of well from top of casing; DTW=distance to water from top of casing; # of bail vols=number of bail volumes. TOC, DTW, and TDW should be measured and/or calculated to the nearest 0.01 foot. Also note that if a mechanical pump is used for purging, indicate the total minutes of pumping time below. If a bailer is used for purging, indicate the total number of bail volumes. Attach additional sheets if necessary.

[illegible]

SAMPLING COLLECTION AND PRESERVATION

30) Matrices Sampled:

Aqueous: Potable Well\_\_\_\_, Monitoring Well\_\_\_\_,  
Surface Water\_\_\_\_, Leachate\_\_\_\_, Other\_\_\_\_  
Nonaqueous: Soil\_\_\_\_, Sediment\_\_\_\_, Other\_\_\_\_

31) Dedicated Hose: Yes\_\_\_\_ or No\_\_\_\_

32) Hose Construction: PVC\_\_\_\_, Teflon\_\_\_\_, Tygon\_\_\_\_,  
Butyl\_\_\_\_, Other\_\_\_\_ Explain:\_\_\_\_\_

33) Sample Collection: (Time of Collection for each well/  
sample should be indicated on the back of this page)

a) Bailer-Construction: Teflon\_\_\_\_, Stainless Steel\_\_\_\_,  
PVC\_\_\_\_

b) Becon Bomb Sampler\_\_\_\_, Size: \_\_\_\_oz.,  
Construction: \_\_\_\_\_

c) Other\_\_\_\_, Explain:\_\_\_\_\_

34) Lines Used to Lower Bailer: Stainless Steel  
Cable/Leader\_\_\_\_, Teflon\_\_\_\_, PVC Rope\_\_\_\_, Other\_\_\_\_

35) Are dedicated bailers used for each well? Yes\_\_\_\_ or No\_\_\_\_

36) Are bailers: Laboratory Cleaned\_\_\_\_, Laboratory Name:\_\_\_\_  
\_\_\_\_\_, Field Cleaned\_\_\_\_, Describe  
Method:\_\_\_\_\_

37) Prior to use, are bailers, sample bottles, hoses, etc.  
kept clean, i.e., not placed in direct contact with  
ground, etc.: Yes\_\_\_\_ or No\_\_\_\_

38) Are sample bottles supplied by laboratory? Yes\_\_\_\_ or  
No\_\_\_\_

39) Are sample preservation instructions supplied by  
laboratory? Yes\_\_\_\_ or No\_\_\_\_

40) Are sample preservatives supplied by laboratory? Yes\_\_\_\_  
or No\_\_\_\_

41) Sample Preservation:

Constituent	Teflon Top in contact with sample YES or NO	Head Space YES or NO	Refridg- erated YES or NO	Acidified YES or NO	Alkalized YES or NO	Bottles YES or NO
Volatile Organics				N/A	N/A	N/A
TOX				N/A	N/A	N/A
Extractable Organics	N/A	N/A		N/A	N/A	N/A
Metals	N/A	N/A			N/A	N/A
Cyanide	N/A	N/A		N/A		N/A
Phenols	N/A	N/A			N/A	N/A
Biological	N/A	N/A		N/A	N/A	

42) Indicate below any other constituents to be analyzed and their forms of preservation.

---



---

43) Were samples for metals analysis filtered in field?  
Yes\_\_\_ or No\_\_\_

44) Were samples for metals analysis filtered in lab? Yes\_\_\_  
or No\_\_\_

45) Were field blanks taken? Yes\_\_\_ or No\_\_\_

46) Were trip blanks taken? Yes\_\_\_ or No\_\_\_

47) What parameters/analysis were performed on field and trip blanks? Volatile Organics\_\_\_, Semi-Volatiles\_\_\_, Pesticides\_\_\_, PCBs\_\_\_, Metals\_\_\_, Other\_\_\_

48) Prior to sampling, was an equipment blank performed:  
Yes\_\_\_ or No\_\_\_

49) Prior to sampling each well, are disposable gloves worn?  
Yes\_\_\_ or No\_\_\_

50) If yes, are the gloves changed between wells? Yes\_\_\_ or No\_\_\_

CHAIN OF CUSTODY

- 51) Laboratory Name/Certification Number \_\_\_\_\_
- 52) Laboratory Address: \_\_\_\_\_  
\_\_\_\_\_
- 53) Laboratory receipt date and time: \_\_\_\_\_ / \_\_\_\_\_
- 54) Attached chain of custody: Yes \_\_\_ or No \_\_\_

Sample Number	Relinquished By	Received By	Time	Date	Reason for Change of Custody

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information contained in this report, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete and meets the description specified in N.J.A.C. 7:14A-2.5(a)10, and 6.1 through 6.12. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Sampler

Name/Title (printed) \_\_\_\_\_

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Company Name and Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Notes:

1. The sampling team may use their own reporting forms only if the forms contain all of the information required in this sample collection and preservation form.
2. If any of the items within this sample collection and preservation form vary for different monitor wells, the information must be documented within this form or as attachments to this form

**LABORATORY SAMPLE CHAIN OF CUSTODY/CHRONICLE FOR**  
**NJPDES COMPLIANCE MONITORING**

Relinquisher of sample: (please print)

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Company: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Laboratory sample recipient: (please print)

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Laboratory Name: \_\_\_\_\_

NJDEP Laboratory Cert. No. \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Did samples arrive cold? Yes\_\_\_ or No\_\_\_

Were the samples properly preserved? Yes\_\_\_ or No\_\_\_

If no, which analyses will be affected: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Did sample for the analyses of volatile organics contain  
headspace? Yes\_\_\_ or No\_\_\_

Was the septum in place with the TFE side down? Yes\_\_\_ No\_\_\_

Sample Preparation Chemist

	<u>Name please print</u>	<u>Signature</u>	<u>Date</u>
1. Base/Neutrals	_____	_____	_____
2. Acids	_____	_____	_____
3. Pesticides	_____	_____	_____
4. Herbicides	_____	_____	_____
5. PCB's	_____	_____	_____
6. Metals	_____	_____	_____
7. Other	_____	_____	_____
8. Other	_____	_____	_____
9. Other	_____	_____	_____

Analyst

	<u>Name please print</u>	<u>Signature</u>	<u>Date</u>
1. Base/Neutrals	_____	_____	_____
2. Acids	_____	_____	_____
3. Pesticides	_____	_____	_____
4. Herbicides	_____	_____	_____
5. PCB's	_____	_____	_____
6. Metals	_____	_____	_____
7. Volatiles	_____	_____	_____
8. TOC	_____	_____	_____
9. TOX	_____	_____	_____
10. Phenols (total)	_____	_____	_____
11. Cyanide (total)	_____	_____	_____
12. Other	_____	_____	_____
13. Other	_____	_____	_____
14. Other	_____	_____	_____
15. Other	_____	_____	_____

Ammonia-N\*  
Biochemical Oxygen Demand  
Chemical Oxygen Demand  
Chloride  
Cyanide (Total)\*  
Fluoride  
Hardness  
Kjeldahl-N\*  
Nitrate-N\*  
Nitrite-N  
Oil and Grease\*  
Phenols (Total)\*  
Phosphate (Total)\*  
Sulfate  
Total Organic Carbon (TOC)  
Total Organic Halogen (TOX)

**Methods:** \_\_\_\_\_



Did any of the sample extraction and/or analysis exceed  
holding times? Yes\_\_\_ or No\_\_\_

If yes, which analyses will be affected:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If re-extraction and/or reanalyzes is necessary, indicate the  
reason and attach another Laboratory Chain of Custody/Chronicle with the appropriate signatures and dates.

Quality Assurance Officer

<u>Name please print</u>	<u>Signature</u>	<u>Date</u>
_____	_____	_____

LABORATORY AUTHENTICATION STATEMENT FOR NJPDES  
COMPLIANCE MONITORING

I certify under penalty of law, where applicable, this laboratory meets the Laboratory Performance Standards and Quality control requirements specified in N.J.A.C. 7:18, 40 CFR 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analyses. I have personally examined and am familiar with the information contained in this report, and that, based on my inquiry of those individuals immediately responsible for obtaining the information. I believe the submitted information is true, accurate, complete, and meets the standards specified in N.J.A.C. 7:18, 40 CFR 136, and/or SW 846. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

---

Laboratory Manager (as defined in N.J.A.C. 7:18)

ANALYSIS REPORT FOR VOLATILE ORGANICS BY GC/MS

CLIENT :  
LAB SAMPLE #:   
MATRIX : WATER

METHOD : EPA 624  
ANALYSIS DATE:  
DATA FILE :

COMPOUND	RESULT (ug/L)	METHOD BLANK RESULT (ug/L)	MDL (ug/L)	Q
1) ACROLEIN				
2) ACRYLONITRILE				
3) BENZENE				
4) BROMOFORM				
5) BROMODICHLOROMETHANE				
6) BROMOMETHANE				
7) CARBON TETRACHLORIDE				
8) CHLOROBENZENE				
9) CHLOROETHANE				
10) 2-CHLOROETHYL VINYL ETHER				
11) CHLOROFORM				
12) CHLOROMETHANE				
13) cis-1,3-DICHLOROPROPENE				
14) DIBROMOCHLOROMETHANE				
15) 1,2-DICHLOROBENZENE				
16) 1,3-DICHLOROBENZENE				
17) 1,4-DICHLOROBENZENE				
18) 1,1-DICHLOROETHANE				
19) 1,2-DICHLOROETHANE				
20) 1,1-DICHLOROETHYLENE				
21) trans-1,2-DICHLOROETHYLENE				
22) trans-1,3-DICHLOROPROPENE				
23) 1,2-DICHLOROPROPANE				
24) ETHYLBENZENE				
25) METHYLENE CHLORIDE				
26) 1,1,2,2-TETRACHLOROETHANE				
27) TETRACHLOROETHYLENE				
28) TOLUENE				
29) 1,1,1-TRICHLOROETHANE				
30) 1,1,2-TRICHLOROETHANE				
31) TRICHLOROETHYLENE				
32) TRICHLOROFLUOROMETHANE				
33) VINYL CHLORIDE				
34) m-XYLENE				
35) p,o-XYLENE				

ND =NOT DETECTED  
MDL=METHOD DETECTION LIMIT

QUALIFIERS (Q)

J=INDICATES AN ESTIMATED VALUE BELOW MDL  
B=INDICATES COMPOUND FOUND IN THE ASSOCIATED BLANK AS WELL AS IN SAMPLE

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:

Lab Sample ID:

Extraction Date:

Lab File ID:

Date Analyzed:

Matrix: WATER

Number TICs found:

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

QUALIFIERS (Q):

- (1) THIS COMPOUND (OR SIMILAR SPECTRA) FOUND IN LAB BLANK.
- (2) INTERNAL OR SURROGATE STANDARD ADDED BY LABORATORY.
- (3) THIS COMPOUND ALREADY IDENTIFIED AND REPORTED AS TARGET COMPOUND.
- (4) PROBABLE BACKGROUND DUE TO SOLVENT OR CO2.

## ANALYSIS REPORT FOR BASE NEUTRAL EXTRACTABLES BY GC/MS

CLIENT :  
 LAB SAMPLE #:   
 MATRIX : WATER

METHOD : EPA 625  
 ANALYSIS DATE:  
 DATA FILE :

COMPOUND	RESULT (ug/L)	METHOD BLANK RESULT (ug/L)	MDL (ug/L)	Q
1) ACENAPHTHENE				
2) ACENAPHTHYLENE				
3) ANTHRACENE				
4) BENZIDENE				
5) BENZO(A)ANTHRACENE				
6) BENZO(A)PYRENE				
7) BENZO(B)FLUORANTHENE				
8) BENZO(K)FLUORANTHENE				
9) BENZO(G,H,I)PERYLENE				
10) BIS(2-CHLOROETHOXY)METHANE				
11) BIS(2-CHLOROETHYL)ETHER				
12) BIS(2-CHLOROISOPROPYL)ETHER				
13) BIS(2-ETHYLHEXYL)PHTHALATE				
14) 4-BROMOPHENYL PHENYL ETHER				
15) BUTYL BENZYL PHTHALATE				
16) 2-CHLORONAPHTHALENE				
17) 4-CHLOROPHENYL PHENYL ETHER				
18) CHRYSENE				
19) DIBENZO(A,H)ANTHRACENE				
20) 1,2-DICHLOROBENZENE				
21) 1,3-DICHLOROBENZENE				
22) 1,4-DICHLOROBENZENE				
23) 3,3'-DICHLOROBENZIDENE				
24) DIETHYL PHTHALATE				
25) DIMETHYL PHTHALATE				
26) DI-N-BUTYL PHTHALATE				
27) 2,4-DINITROTOLUENE				
28) 2,6-DINITROTOLUENE				
29) DI-N-OCTYL PHTHALATE				
30) 1,2-DIPHENYLHYDRAZINE				
31) FLUORANTHENE				
32) FLUORENE				
33) HEXACHLOROBENZENE				
34) HEXACHLOROBUTADIENE				
35) HEXACHLOROCYCLOPENTADIENE				
36) HEXACHLOROETHANE				
37) INDENO(1,2,3-CD)PYRENE				
38) ISOPHORONE				
39) NAPHTHALENE				
40) NITROBENZENE				
41) N-NITROSODIMETHYLAMINE				
42) N-NITROSODI-N-PROPYLAMINE				
43) N-NITROSODIPHENYLAMINE				
44) PHENANTHRENE				
45) PYRENE				
46) 1,2,4-TRICHLOROBENZENE				

ND =NOT DETECTED

MDL=METHOD DETECTION LIMIT

QUALIFIERS (Q)

J=INDICATES AN ESTIMATED VALUE BELOW MDL

B=INDICATES COMPOUND FOUND IN THE ASSOCIATED BLANK AS WELL AS IN SAMPLE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:

Lab Sample ID:

Extraction Date:

Lab File ID:

Date Analyzed:

Matrix: WATER

Number TICs found:

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

QUALIFIERS (Q):

- (1) THIS COMPOUND (OR SIMILAR SPECTRA) FOUND IN LAB BLANK.
- (2) INTERNAL OR SURROGATE STANDARD ADDED BY LABORATORY.
- (3) THIS COMPOUND ALREADY IDENTIFIED AND REPORTED AS TARGET COMPOUND.
- (4) PROBABLE BACKGROUND DUE TO SOLVENT OR CO<sub>2</sub>.

ANALYSIS REPORT FOR ACID EXTRACTABLES BY GC/MS

CLIENT :  
LAB SAMPLE #:   
MATRIX : WATER

METHOD : EPA 625  
ANALYSIS DATE:  
DATA FILE :

COMPOUND	RESULT (ug/L)	METHOD BLANK RESULT (ug/L)	MDL (ug/L)	Q
1) 4-CHLORO-3-METHYL PHENOL				
2) 2-CHLOROPHENOL				
3) 2,4-DICHLOROPHENOL				
4) 2,4-DIMETHYLPHENOL				
5) 2,4-DINITROPHENOL				
6) 2-METHYL-4,6-DINITROPHENOL				
7) 2-NITROPHENOL				
8) 4-NITROPHENOL				
9) PENTACHLOROPHENOL				
10) PHENOL				
11) 2,4,6-TRICHLOROPHENOL				

ND =NOT DETECTED  
MDL=METHOD DETECTION LIMIT

QUALIFIERS (Q)

J=INDICATES AN ESTIMATED VALUE BELOW MDL  
B=INDICATES COMPOUND FOUND IN THE ASSOCIATED BLANK AS WELL AS IN SAMPLE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:

Lab Sample ID:

Extraction Date:

Lab File ID:

Date Analyzed:

Matrix: WATER

Number TICs found:

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

QUALIFIERS (Q):

- (1) THIS COMPOUND (OR SIMILAR SPECTRA) FOUND IN LAB BLANK.
- (2) INTERNAL OR SURROGATE STANDARD ADDED BY LABORATORY.
- (3) THIS COMPOUND ALREADY IDENTIFIED AND REPORTED AS TARGET COMPOUND.
- (4) PROBABLE BACKGROUND DUE TO SOLVENT OR CO<sub>2</sub>.



## SURROGATE RECOVERY DATA

CLIENT :  
LAB SAMPLE # :  
MATRIX :

<u>VOLATILE FRACTION COMPOUNDS</u>	<u>AMOUNT ADDED (UG)</u>	<u>%RECOVERY</u>	<u>EPA CONTROL LIMIT (LOWER-UPPER)</u>
1,2-DICHLOROETHANE-D4			76-114
4-BROMOFLUOROBENZENE			86-115
TOLUENE-D8			88-110
 <u>BASE/NEUTRAL FRACTION COMPOUNDS</u>			
NITROBENZENE-D5			35-114
2-FLUOROBIPHENYL			43-116
P-TERPHENYL-D14			33-141
 <u>ACID FRACTION COMPOUNDS</u>			
2-FLUOROPHENOL			21-100
PHENOL-D6			10-94
2,4,6-TRIBROMOPHENOL			10-123

\*Values outside of QC limits.

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

<u>m/z</u>	<u>Ion Abundance Criteria</u>	<u>%Relative Base Peak</u>	<u>Abundance Appropriate Peak</u>	<u>Status</u>
50	15-40% of mass 95			
75	30-60% of mass 95			
95	Base peak, 100% relative abundance			
96	5-9% of mass 95			
173	Less than 2% of mass 174			
174	Greater than 50% of mass 95			
175	5-9% of mass 174			
176	95-101% of mass 174			
177	5-9% of mass 176			

Injection Date:  
Injection Time:  
Data File:  
Scan:

TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

<u>SAMPLE ID</u>	<u>DATA FILE</u>	<u>INJECTION DATE</u>	<u>INJECTION TIME</u>
------------------	------------------	-----------------------	-----------------------

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphosphine (DFTPP)

<u>m/z</u>	<u>Ion Abundance Criteria</u>	<u>%Relative Base Peak</u>	<u>Abundance Appropriate Peak</u>	<u>Status</u>
51	30-60% of mass 198			
68	less than 2% of mass 69			
69	(reference only)			
70	Less than 2% of mass 69			
127	40-60% of mass 198			
197	Less than 1% of mass 198			
198	Base peak, 100% relative abundance			
199	5-9% of mass 198			
275	10-30% of mass 198			
365	Greater than 1% of mass 198			
441	0-100% of mass 443			
442	Greater than 40% of mass 198			
443	17-23% of mass 442			

Injection Date:  
Injection Time:  
Data File:  
Scan:

TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

<u>SAMPLE ID</u>	<u>DATA FILE</u>	<u>INJECTION DATE</u>	<u>INJECTION TIME</u>
------------------	------------------	-----------------------	-----------------------

Volatile Spike/Spike Duplicate Recoveries

Analysis Date :  
Instrument ID :  
Matrix : Water  
Reporting Units: ug/L

MS File :  
MSD File:

Page: 1

The following QC data pertains to Lab Sample Numbers:

Compounds	Sample Result	Conc Added	Conc MS	% Rec#	Conc MSD	% Rec#	RPD#	QC RPD	Limits Rec
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
ACROLEIN									nd- nd
ACRYLONITRILE									nd- nd
BENZENE									37-151
DICHLOROBROMOMETHANE									35-155
BROMOFORM									45-169
METHYL BROMIDE									D-242
CARBON TETRACHLORIDE									70-140
CHLOROBENZENE									37-160
CHLOROETHANE									14-230
CHLOROETHYL VINYL ETHER									D-305
CHLOROFORM									51-138
METHYL CHLORIDE									D-273
CHLORODIBROMOMETHANE									53-149
1,2-DICHLOROBENZENE									18-190
1,3-DICHLOROBENZENE									59-156
1,4-DICHLOROBENZENE									18-190
1,1-DICHLOROETHANE									59-155
1,2-DICHLOROETHANE									49-155
1,1-DICHLOROETHYLENE									D-234
1,2-TRANS-DICHLOROETHYLENE									54-156
1,2-DICHLOROPROPANE									D-210
1,3-DICHLOROPROPYLENE (cis)									D-227
1,3-DICHLOROPROPYLENE (trans)									17-183
ETHYLBENZENE									37-162
METHYLENE CHLORIDE									D-221
1,1,2,2-TETRACHLOROETHANE									46-157
TETRACHLOROETHYLENE									64-148
TOULENE									47-150
1,1,1-TRICHLOROETHANE									52-162
1,1,2-TRICHLOROETHANE									52-150
TRICHLOROETHYLENE									71-157
TRICHLOROFLUOROMETHANE									17-181
VINYL CHLORIDE									D-251
m-XYLENE									nd- nd
p,o-XYLENE									nd- nd

# Column to be used to flag recovery and RPD values with an asterisk.

x Values outside of QC limits.

D = Detected (Result > 0)      nd = QC Limits yet to be determined.

COMMENTS: \_\_\_\_\_

## BASE NEUTRAL EXTRACTABLE SPIKE/SPIKE DUPLICATE RECOVERIES

Analysis Date :  
 Instrument ID :  
 Matrix : Water  
 Reporting Units: ug/L

MS File :

MSD File:

Page: 1

The following QC data pertains to Lab Sample Numbers:

Compounds	Sample Result	Conc Added	Conc MS	% Rec #	Conc MSD	% Rec #	RPD#	RPD	QC RPD	LIMITS REC
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
ACENAPHTHENE									nd	47-145
ACENAPHTHYLENE									nd	33-145
ANTHRACENE									nd	27-133
BENZIDINE									nd	nd
BENZO(A)ANTHRACENE									nd	33-143
BENZO(B)FLUORANTHENE									nd	24-159
BENZO(K)FLUORANTHENE									nd	11-162
BENZO(A)PYRENE									nd	17-163
BENZO(GHI)PERYLENE									nd	D-219
BUTYL BENZYL PHTHALATE									nd	D-152
BIS(2-CHLOROETHOXY)METHANE									nd	33-184
BIS(2-CHLOROETHYL)ETHER									nd	12-158
BIS(2-CHLORISOPROPYL)ETHER									nd	36-166
BIS(2-ETHYLHEXYL)PHTHALATE									nd	8-158
4-BROMOPHENYL PHENYL ETHER									nd	53-127
2-CHLORONAPHTHALENE									nd	60-118
4-CHLOROPHENYL PHENYL ETHER									nd	25-158
CHRYSENE									nd	17-168
DIBENZO(A,H)ANTHRACENE									nd	D-227
DI-N-BUTYL PHTHALATE									nd	1-118
1,2-DICHLOROBENZENE									nd	32-129
1,3-DICHLOROBENZENE									nd	D-172
1,4-DICHLOROBENZENE									nd	20-124
3,3'-DICHLOROBENZIDINE									nd	D-262
DIETHYL PHTHALATE									nd	D-114
DIMETHYL PHTHALATE									nd	D-112
2,4-DINITROTOLUENE									nd	39-139
2,6-DINITROTOLUENE									nd	50-158
1,2-DIPHENYLHYDRAZINE									nd	nd
DI-N-OCTYL PHTHALATE									nd	4-146
FLUORANTHENE									nd	26-137
FLUORENE									nd	59-121
HEXACHLOROBENZENE									nd	D-152
HEXACHLOROBUTADIENE									nd	24-116
HEXACHLOROCYCLOPENTADINE									nd	nd
HEXACHLOROETHANE									nd	40-113
INDENO(1,2,3-CD)PYRENE									nd	D-171
ISOPHORONE									nd	21-196
NAPHTHALENE									nd	21-133
NITROBENZENE									nd	35-180
N-NITROSODIMETHYLAMINE									nd	nd
N-NITROSODI-N-PROPYLAMINE									nd	D-230
N-NITROSODIPHENYLAMINE									nd	nd
PHENANTHRENE									nd	54-120
PYRENE									nd	52-115
1,2,4-TRICHLOROBENZENE									nd	44-142

# Column to be used to flag recovery and RPD values with an asterisk.

x Values outside of QC limits.

D = Detected (Result &gt; 0)

nd - QC Limits yet to be determined.

Acid Extractable Spike/Spike Duplicate Recoveries

Analysis Date :  
Instrument ID :  
Matrix : Water  
Reporting Units: ug/L

MS File :  
MSD File:

The following QC data pertains to Lab Sample Numbers:

Compounds	Sample Result	Conc Added	Conc MS	% Rec#	Conc MSD	% Rec#	RPD#	QC RPD	Limits Rec
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
4-CHLORO-3-METHYL PHENOL									22-147
2-CHLOROPHENOL									23-134
2,4-DICHLOROPHENOL									39-135
2,4-DIMETHYLPHENOL									32-119
2,4-DINITROPHENOL									D-191
2-METHYL-4,6-DINITROPHENOL									D-181
2-NITROPHENOL									29-182
4-NITROPHENOL									D-132
PENTACHLOROPHENOL									14-176
PHENOL									5-112
2,4,6-TRICHLOROPHENOL									37-144

# Column to be used to flag recovery and RPD values with an asterisk.

x Values outside of QC limits.

D = Detected (Result > 0)      nd = QC Limits yet to be determined.

COMMENTS: \_\_\_\_\_

ANALYSIS REPORT FOR VOLATILE ORGANICS BY GC/MS

CLIENT :  
LAB SAMPLE #:   
MATRIX : SOIL

METHOD : SW846 8240  
ANALYSIS DATE:  
DATA FILE :

COMPOUND	RESULT (ug/kg) *	METHOD BLANK RESULT (ug/kg)	MDL (ug/kg) *	Q
1) ACROLEIN				
2) ACRYLONITRILE				
3) BENZENE				
4) BROMOFORM				
5) BROMODICHLOROMETHANE				
6) BROMOMETHANE				
7) CARBON TETRACHLORIDE				
8) CHLOROBENZENE				
9) CHLOROETHANE				
10) 2-CHLOROETHYL VINYL ETHER				
11) CHLOROFORM				
12) CHLOROMETHANE				
13) cis-1,3-DICHLOROPROPENE				
14) DIBROMOCHLOROMETHANE				
15) 1,2-DICHLOROBENZENE				
16) 1,3-DICHLOROBENZENE				
17) 1,4-DICHLOROBENZENE				
18) 1,1-DICHLOROETHANE				
19) 1,2-DICHLOROETHANE				
20) 1,1-DICHLOROETHYLENE				
21) trans-1,2-DICHLOROETHYLENE				
22) trans-1,3-DICHLOROPROPENE				
23) 1,2-DICHLOROPROPANE				
24) ETHYLBENZENE				
25) METHYLENE CHLORIDE				
26) 1,1,2,2-TETRACHLOROETHANE				
27) TETRACHLOROETHYLENE				
28) TOLUENE				
29) 1,1,1-TRICHLOROETHANE				
30) 1,1,2-TRICHLOROETHANE				
31) TRICHLOROETHYLENE				
32) TRICHLOROFLUOROMETHANE				
33) VINYL CHLORIDE				
34) m-XYLENE				
35) p,o-XYLENE				

ND =NOT DETECTED  
MDL=METHOD DETECTION LIMIT

\* = REPORTED ON A DRY WEIGHT BASIS

QUALIFIERS (Q)

J=INDICATES AN ESTIMATED VALUE BELOW MDL  
B=INDICATES COMPOUND FOUND IN THE ASSOCIATED BLANK AS WELL AS IN SAMPLE

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:

Lab Sample ID:

Extraction Date:

Lab File ID:

Date Analyzed:

Matrix: SOIL

Number TICs found:

CONCENTRATION UNITS: ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
=====	=====	=====	=====	=====

## QUALIFIERS (Q):

- (1) THIS COMPOUND (OR SIMILAR SPECTRA) FOUND IN LAB BLANK.
- (2) INTERNAL OR SURROGATE STANDARD ADDED BY LABORATORY.
- (3) THIS COMPOUND ALREADY IDENTIFIED AND REPORTED AS TARGET COMPOUND.
- (4) PROBABLE BACKGROUND DUE TO SOLVENT OR CO2.



ANALYSIS REPORT FOR BASE NEUTRAL EXTRACTABLES BY GC/MS

CLIENT :  
LAB SAMPLE #:   
MATRIX : SOIL

METHOD : SW846 8270  
ANALYSIS DATE:  
DATA FILE :

COMPOUND	RESULT (ug/kg) *	METHOD BLANK RESULT (ug/kg)	MDL (ug/kg) *	Q
1) ACENAPHTHENE				
2) ACENAPHTHYLENE				
3) ANTHRACENE				
4) BENZIDENE				
5) BENZO(A) ANTHRACENE				
6) BENZO(A) PYRENE				
7) BENZO(B) FLUORANTHENE				
8) BENZO(K) FLUORANTHENE				
9) BENZO(G,H,I) PERYLENE				
10) BIS(2-CHLOROETHOXY) METHANE				
11) BIS(2-CHLOROETHYL) ETHER				
12) BIS(2-CHLOROISOPROPYL) ETHER				
13) BIS(2-ETHYLHEXYL) PHTHALATE				
14) 4-BROMOPHENYL PHENYL ETHER				
15) BUTYL BENZYL PHTHALATE				
16) 2-CHLORONAPHTHALENE				
17) 4-CHLOROPHENYL PHENYL ETHER				
18) CHRYSENE				
19) DIBENZO(A,H) ANTHRACENE				
20) 1,2-DICHLOROBENZENE				
21) 1,3-DICHLOROBENZENE				
22) 1,4-DICHLOROBENZENE				
23) 3,3'-DICHLOROBENZIDENE				
24) DIETHYL PHTHALATE				
25) DIMETHYL PHTHALATE				
26) DI-N-BUTYL PHTHALATE				
27) 2,4-DINITROTOLUENE				
28) 2,6-DINITROTOLUENE				
29) DI-N-OCTYL PHTHALATE				
30) 1,2-DIPHENYLHYDRAZINE				
31) FLUORANTHENE				
32) FLUORENE				
33) HEXACHLOROBENZENE				
34) HEXACHLOROBUTADIENE				
35) HEXACHLOROCYCLOPENTADIENE				
36) HEXACHLOROETHANE				
37) INDENO(1,2,3-CD) PYRENE				
38) ISOPHORONE				
39) NAPHTHALENE				
40) NITROBENZENE				
41) N-NITROSODIMETHYLAMINE				
42) N-NITROSODI-N-PROPYLAMINE				
43) N-NITROSODIPHENYLAMINE				
44) PHENANTHRENE				
45) PYRENE				
46) 1,2,4-TRICHLOROBENZENE				

\* = REPORTED ON A DRY WEIGHT BASIS

ND =NOT DETECTED

MDL=METHOD DETECTION LIMIT

QUALIFIERS (Q)

J=INDICATES AN ESTIMATED VALUE BELOW MDL

B=INDICATES COMPOUND FOUND IN THE ASSOCIATED BLANK AS WELL AS IN SAMPLE

ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:

Lab Sample ID:

Extraction Date:

Lab File ID:

Date Analyzed:

Matrix: SOIL

Number TICs found:

CONCENTRATION UNITS: ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

## QUALIFIERS (Q):

- (1) THIS COMPOUND (OR SIMILAR SPECTRA) FOUND IN LAB BLANK.
- (2) INTERNAL OR SURROGATE STANDARD ADDED BY LABORATORY.
- (3) THIS COMPOUND ALREADY IDENTIFIED AND REPORTED AS TARGET COMPOUND.
- (4) PROBABLE BACKGROUND DUE TO SOLVENT OR CO<sub>2</sub>.

ANALYSIS REPORT FOR ACID EXTRACTABLES BY GC/MS

CLIENT :  
LAB SAMPLE # :  
MATRIX : SOIL

METHOD : SW846 8270  
ANALYSIS DATE :  
DATA FILE :

COMPOUND	RESULT (ug/kg) *	METHOD BLANK RESULT (ug/kg)	MDL (ug/kg) *	Q
----------	---------------------	--------------------------------	------------------	---

- 1) 4-CHLORO-3-METHYL PHENOL
- 2) 2-CHLOROPHENOL
- 3) 2,4-DICHLOROPHENOL
- 4) 2,4-DIMETHYLPHENOL
- 5) 2,4-DINITROPHENOL
- 6) 2-METHYL-4,6-DINITROPHENOL
- 7) 2-NITROPHENOL
- 8) 4-NITROPHENOL
- 9) PENTACHLOROPHENOL
- 10) PHENOL
- 11) 2,4,6-TRICHLOROPHENOL

ND =NOT DETECTED  
MDL=METHOD DETECTION LIMIT

\* = REPORTED ON A DRY WEIGHT BASIS

QUALIFIERS (Q)

J=INDICATES AN ESTIMATED VALUE BELOW MDL  
B=INDICATES COMPOUND FOUND IN THE ASSOCIATED BLANK AS WELL AS IN SAMPLE

ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Client Name:  
Lab Sample ID:  
Lab File ID:  
Matrix: SOIL

Batch Number:  
Extraction Date:  
Date Analyzed:

Number TICs found:

CONCENTRATION UNITS: ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

QUALIFIERS (Q):

- (1) THIS COMPOUND (OR SIMILAR SPECTRA) FOUND IN LAB BLANK.
- (2) INTERNAL OR SURROGATE STANDARD ADDED BY LABORATORY.
- (3) THIS COMPOUND ALREADY IDENTIFIED AND REPORTED AS TARGET COMPOUND.
- (4) PROBABLE BACKGROUND DUE TO SOLVENT OR CO2.

SURROGATE RECOVERY DATA

CLIENT :  
LAB SAMPLE # :  
MATRIX : SOIL

<u>VOLATILE FRACTION COMPOUNDS</u>	<u>ADDED (UG)</u>	<u>%RECOVERY</u>	<u>EPA CONTROL LIMIT (LOWER-UPPER)</u>
1,2-DICHLOROETHANE-D4			70-121
4-BROMOFLUOROBENZENE			74-121
TOLUENE-D8			81-117
 <u>BASE/NEUTRAL FRACTION COMPOUNDS</u>			
NITROBENZENE-D5			23-120
2-FLUOROBIPHENYL			30-115
P-TERPHENYL-D14			18-137
 <u>ACID FRACTION COMPOUNDS</u>			
2-FLUOROPHENOL			25-121
PHENOL-D6			24-113
2,4,6-TRIBROMOPHENOL			19-122

\*Values outside of QC limits.

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

<u>m/z</u>	<u>Ion Abundance Criteria</u>	<u>%Relative Base Peak</u>	<u>Abundance Appropriate Peak</u>	<u>Status</u>
50	15-40% of mass 95			
75	30-60% of mass 95			
95	Base peak, 100% relative abundance			
96	5-9% of mass 95			
173	Less than 2% of mass 174			
174	Greater than 50% of mass 95			
175	5-9% of mass 174			
176	95-101% of mass 174			
177	5-9% of mass 176			

Injection Date:  
Injection Time:  
Data File:  
Scan:

TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

<u>SAMPLE ID</u>	<u>DATA FILE</u>	<u>INJECTION DATE</u>	<u>INJECTION TIME</u>
------------------	------------------	-----------------------	-----------------------

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphosphine (DFTPP)

<u>m/z</u>	<u>Ion Abundance Criteria</u>	<u>%Relative Base Peak</u>	<u>Abundance Appropriate Peak</u>	<u>Status</u>
51	30-60% of mass 198			
68	less than 2% of mass 69			
69	(reference only)			
70	Less than 2% of mass 69			
127	40-60% of mass 198			
197	Less than 1% of mass 198			
198	Base peak, 100% relative abundance			
199	5-9% of mass 198			
275	10-30% of mass 198			
365	Greater than 1% of mass 198			
441	0-100% of mass 443			
442	Greater than 40% of mass 198			
443	17-23% of mass 442			

Injection Date:  
Injection Time:  
Data File:  
Scan:

TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

<u>SAMPLE ID</u>	<u>DATA FILE</u>	<u>INJECTION DATE</u>	<u>INJECTION TIME</u>
------------------	------------------	-----------------------	-----------------------

Volatile Spike/Spike Duplicate Recoveries

Analysis Date :  
Instrument ID :  
Matrix : Soil  
Reporting Units: mg/kg

MS File :  
MSD File:  
  
Page: 1

The following QC data pertains to Lab Sample Numbers:

Compounds	Sample Result	Conc Added	Conc MS	% Rec#	Conc MSD	% Rec#	RPD#	QC RPD	Limits Rec
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
ACROLEIN									
ACRYLONITRILE									
BENZENE									
DICHLOROBROMOMETHANE									
BROMOFORM									
METHYL BROMIDE									
CARBON TETRACHLORIDE									
CHLOROBENZENE									
CHLOROETHANE									
CHLOROETHYL VINYL ETHER									
CHLOROFORM									
METHYL CHLORIDE									
CHLORODIBROMOMETHANE									
1,2-DICHLOROBENZENE									
1,3-DICHLOROBENZENE									
1,4-DICHLOROBENZENE									
1,1-DICHLOROETHANE									
1,2-DICHLOROETHANE									
1,1-DICHLOROETHYLENE									
1,2-TRANS-DICHLOROETHYLENE									
1,2-DICHLOROPROPANE									
1,3-DICHLOROPROPYLENE (cis)									
1,3-DICHLOROPROPYLENE (trans)									
ETHYLBENZENE									
METHYLENE CHLORIDE									
1,1,2,2-TETRACHLOROETHANE									
TETRACHLOROETHYLENE									
TOULENE									
1,1,1-TRICHLOROETHANE									
1,1,2-TRICHLOROETHANE									
TRICHLOROETHYLENE									
TRICHLOROFLUOROMETHANE									
VINYL CHLORIDE									
m-XYLENE									
p,o-XYLENE									

# Column to be used to flag recovery and RPD values with an asterisk.

x Values outside of QC limits.

D = Detected (Result > 0)      nd = QC Limits yet to be determined.

COMMENTS: \_\_\_\_\_



BASE NEUTRAL EXTRACTABLE SPIKE/SPIKE DUPLICATE RECOVERIES

Analysis Date :  
 Instrument ID :  
 Matrix : Soil  
 Reporting Units: mg/kg  
 The following QC data pertains to Lab Sample Numbers:

MS File :

MSD File:

Page: 1

Compounds	Sample Result	Conc Added	Conc MS	% Rec #	Conc MSD	% Rec #	RPD#	RPD	QC RPD	LIMITS REC
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
ACENAPHTHENE										
ACENAPHTHYLENE										
ANTHRACENE										
BENZIDINE										
BENZO (A) ANTHRACENE										
BENZO (B) FLUORANTHENE										
BENZO (K) FLUORANTHENE										
BENZO (A) PYRENE										
BENZO (GHI) PERYLENE										
BUTYL BENZYL PHTHALATE										
BIS (2-CHLOROETHOXY) METHANE										
BIS (2-CHLOROETHYL) ETHER										
BIS (2-CHLORISOPROPYL) ETHER										
BIS (2-ETHYLHEXYL) PHTHALATE										
4-BROMOPHENYL PHENYL ETHER										
2-CHLORONAPHTHALENE										
4-CHLOROPHENYL PHENYL ETHER										
CHRYSENE										
DIBENZO (A, H) ANTHRACENE										
DI-N-BUTYL PHTHALATE										
1,2-DICHLOROBENZENE										
1,3-DICHLOROBENZENE										
1,4-DICHLOROBENZENE										
3,3'-DICHLOROBENZIDINE										
DIETHYL PHTHALATE										
DIMETHYL PHTHALATE										
2,4-DINITROTOLUENE										
2,6-DINITROTOLUENE										
1,2-DIPHENYLHYDRAZINE										
DI-N-OCTYL PHTHALATE										
FLUORANTHENE										
FLUORENE										
HEXACHLOROBENZENE										
HEXACHLOROBUTADIENE										
HEXACHLOROCYCLOPENTADINE										
HEXACHLOROETHANE										
INDENO (1,2,3-CD) PYRENE										
ISOPHORONE										
NAPHTHALENE										
NITROBENZENE										
N-NITROSODIMETHYLAMINE										
N-NITROSODI-N-PROPYLAMINE										
N-NITROSODIPHENYLAMINE										
PHENANTHRENE										
PYRENE										
1,2,4-TRICHLOROBENZENE										

# Column to be used to flag recovery and RPD values with an asterisk.  
 x Values outside of QC limits.

D = Detected (Result > 0)      nd - QC Limits yet to be determined.

Acid Extractable Spike/Spike Duplicate Recoveries

Analysis Date :  
Instrument ID :  
Matrix : Soil  
Reporting Units: mg/kg

MS File :  
MSD File:

The following QC data pertains to Lab Sample Numbers:

Compounds	Sample Result	Conc Added	Conc MS	% Rec#	Conc MSD	% Rec#	RPD#	QC RPD	Limits Rec
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
4-CHLORO-3-METHYL PHENOL									
2-CHLOROPHENOL									
2,4-DICHLOROPHENOL									
2,4-DIMETHYLPHENOL									
2,4-DINITROPHENOL									
2-METHYL-4,6-DINITROPHENOL									
2-NITROPHENOL									
4-NITROPHENOL									
PENTACHLOROPHENOL									
PHENOL									
2,4,6-TRICHLOROPHENOL									

# Column to be used to flag recovery and RPD values with an asterisk.

x Values outside of QC limits.

D = Detected (Result > 0)      nd = QC Limits yet to be determined.

COMMENTS: \_\_\_\_\_

New Jersey Department of Environmental Protection  
Division of Water Resources  
Bureau of Aquifer Protection  
CN-029, Trenton, NJ 08625

LABORATORY QC DATA FORMS FOR NJPDES COMPLIANCE MONITORING

QA/QC DATA FOR PESTICIDES AND PCB's BY GC

1.a. Facility Name:  
Address:

b. NJPDES Permit No.:

2.a. Laboratory Name:

b. Laboratory Certification No.:

3.a. Laboratory Sample No.:

b. Corresponding Customer Sample No.:

4. Matrix:

Water: \_\_\_\_\_ (ug/l)  
Sediment: \_\_\_\_\_ (mg/kg)

5. Reference method used: \_\_\_\_\_  
If it is not a common reference, i.e. Method \_\_\_\_\_ 40 CFR 136,  
Method \_\_\_\_\_ EPA 600/4-79-020, Method \_\_\_\_\_ Standard  
Methods-15th Edition, Method \_\_\_\_\_ SW 846, attach a complete  
description of the method.

6.a. Name of person completing form:

\_\_\_\_\_  
(please print)

\_\_\_\_\_  
(signature)

6.b.

\_\_\_\_\_  
(date)

All raw data and ALL chromatograms must be available upon request  
for a minimum time period of five years.

PARAMETER	SAMPLE RESULTS	MDL	METHOD BLANK	BLANK SPIKE RECOVERY PERCENT	DUP#1	DUP#2	MATRIX SPIKE RECOVERY PERCENT
Aldrin*	Units: <u>  /  </u>	<u>  /  </u>	<u>  /  </u>		<u>  /  </u>	<u>  /  </u>	
alpha-BHC							
beta-BHC							
gamma-BHC (lindane)*							
delta-BHC							
Chlordane*							
4,4-DDT*							
4,4-DDE*							
4,4-DDD*							
Dieldrin							
alpha-Endosulfan							
Beta-Endosulfan							
Endosulfan Sulfate							
Endrin*							
Endrine Aldehyde							
Heptachlor*							
Heptachlor Epoxide*							
Methoxychlor*							
Mirex*							
PCB-1242*							
PCB-1254*							
PCB-1221*							
PCB-1232*							
PCB-1248*							
PCB-1260*							
PCB-1016*							
Toxaphene*							

New Jersey Department of Environmental Protection  
Division of Water Resources  
Bureau of Aquifer Protection  
CN-029, Trenton, NJ 08625

LABORATORY QC DATA FORMS FOR NJPDES COMPLIANCE MONITORING  
QA/QC DATA FOR HERBICIDES BY GC

1.a. Facility Name:  
Address:

b. NJPDES Permit No.:

2.a. Laboratory Name:

b. Laboratory Certification No.:

3.a. Laboratory Sample No.:

b. Corresponding Customer Sample No.:

4. Matrix:

Water: \_\_\_\_\_ (ug/l)  
Sediment: \_\_\_\_\_ (mg/kg)

5. Reference method used: \_\_\_\_\_  
If it is not a common reference, i.e. Method \_\_\_\_\_ 40 CFR 136,  
Method \_\_\_\_\_ EPA 600/4-79-020, Method \_\_\_\_\_ Standard  
Methods-15th Edition, Method \_\_\_\_\_ SW 846, attach a complete  
description of the method.

6.a. Name of person completing form:

\_\_\_\_\_  
(please print)

\_\_\_\_\_  
(signature)

6.b.

\_\_\_\_\_  
(date)

All raw data and ALL chromatograms must be available upon request  
for a minimum time period of five years.

PARAMETER	SAMPLE RESULTS	MDL	METHOD BLANK	BLANK SPIKE RECOVERY PERCENT	DUP#1	DUP#2	MATRIX SPIKE RECOVERY PERCENT
Units:	<u>  /  </u>	<u>  /  </u>	<u>  /  </u>		<u>  /  </u>	<u>  /  </u>	
2,4-D							
2,4,5-TP							
2,4,5-T							

New Jersey Department of Environmental Protection  
Division of Water Resources  
Bureau of Aquifer Protection  
CN-029, Trenton, NJ 08625

LABORATORY QC DATA FORMS FOR NJPDES COMPLIANCE MONITORING

QA/QC DATA FOR METALS

1.a. Facility Name:  
Address:

b. NJPDES Permit No.:

2.a. Laboratory Name:

b. Laboratory Certification No.:

3.a. Laboratory Sample No.:

b. Corresponding Customer Sample No.:

4. Matrix:

Water: \_\_\_\_\_ (ug/l)  
Sediment: \_\_\_\_\_ (mg/kg)

5. Reference method used: \_\_\_\_\_  
If it is not a common reference, i.e. Method \_\_\_\_\_ 40 CFR 136,  
Method \_\_\_\_\_ EPA 600/4-79-020, Method \_\_\_\_\_ Standard  
Methods-15th Edition, Method \_\_\_\_\_ SW 846, attach a complete  
description of the method.

6.a. Name of person completing form:

\_\_\_\_\_  
(please print)

\_\_\_\_\_  
(signature)

6.b.

\_\_\_\_\_  
(date)

All raw data and ALL chromatograms must be available upon request  
for a minimum time period of five years.

New Jersey Department of Environmental Protection  
Division of Water Resources  
Bureau of Aquifer Protection  
CN-029, Trenton, NJ 08625

LABORATORY QC DATA FORMS FOR NJPDES COMPLIANCE MONITORING  
QA/QC DATA FOR CONVENTIONAL AND NONCONVENTIONAL ANALYSES

1.a. Facility Name:  
Address:

b. NJPDES Permit No.:

2.a. Laboratory Name:

b. Laboratory Certification No.:

3.a. Laboratory Sample No.:

b. Corresponding Customer Sample No.:

4. Matrix:

Water: \_\_\_\_\_ (ug/l)  
Sediment: \_\_\_\_\_ (mg/kg)

5. Reference method used: \_\_\_\_\_  
If it is not a common reference, i.e. Method \_\_\_\_\_ 40 CFR 136,  
Method \_\_\_\_\_ EPA 600/4-79-020, Method \_\_\_\_\_ Standard  
Methods-15th Edition, Method \_\_\_\_\_ SW 846, attach a complete  
description of the method.

6.a. Name of person completing form:

\_\_\_\_\_  
(please print)

\_\_\_\_\_  
(signature)

6.b. \_\_\_\_\_  
(date)

All raw data and ALL chromatograms must be available upon request  
for a minimum time period of five years.



PARAMETER	SAMPLE RESULTS	MDL	METHOD BLANK	BLANK SPIKE RECOVERY PERCENT	DUP#1	DUP#2	MATRIX SPIKE RECOVERY PERCENT
Antimony	Units: <u>  /  </u>	<u>  /  </u>	<u>  /  </u>		<u>  /  </u>	<u>  /  </u>	
Arsenic*							
Barium							
Beryllium							
Cadmium*							
Calcium*							
Chromium, hexavalent							
Chromium, total*							
Copper*							
Iron							
Lead*							
Magnesium*							
Manganese							
Mercury*							
Nickel*							
Potassium*							
Selenium							
Silver							
Sodium							
Thallium							
Zinc*							

100% Pass



State of New Jersey  
Department of Environmental Protection and Energy

Division of Publicly Funded Site Remediation

CN 413  
Trenton, NJ 08625-0413  
Tel. # 609-984-2902  
Fax. # 609-633-2360

Scott A. Weiner  
Commissioner

Anthony J. Farro  
Director

PE 92 - MAY 14 1992

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Stephen F. Lichtenstein  
Lenox Inc.  
100 Lenox Drive  
Lawrenceville, NJ 08648-2394

Re: Issuance of Draft HSWA Permit for Lenox China, Pomona,  
Atlantic County.

Dear Mr. Lichtenstein:

Enclosed is the United States Environmental Protection Agency  
(USEPA) draft Hazardous and Solid Waste Amendments (HSWA) permit  
for Lenox China.

The announcement of the public notice on your local radio station  
will mark the commencement of the 45 day public comment period  
required under N.J.A.C. 7:14A-8.1. The public notice of the  
permit was published in the Atlantic City Press newspaper on May  
8, 1992. Due to the fact that Lenox received the draft NJPDES-DGW  
permit and the draft HSWA permit on differing dates, the  
Department will ensure that Lenox is allowed a full 45 day  
comment period from the date of receipt of the HSWA permit.

If you have any questions, please contact Daryl Clark of my staff  
at (609) 292-8427

Sincerely,

Irene Kropp, Chief  
Bureau of Ground Water  
Pollution Abatement

Enclosures  
GWQM378

FACT SHEET

RECEIVED  
MAR 10 1992

Permittee: Lenox China, a Division of Lenox, Incorporated  
Tilton Road  
Pomona, New Jersey 08240

Department of Environmental Protection & Energy  
Bureau of Ground Water Pollution Abatement

Facility Location: Lenox China, a Division of Lenox,  
Incorporated  
Tilton Road, Pomona,  
Atlantic County, New Jersey 08240

EPA I.D. Number: NJD002325074

BACKGROUND

The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act ("RCRA") and the Hazardous and Solid Waste Amendments of 1984 ("HSWA"), codified at 42 U.S.C. § 6901 et. seq. ("the Act") empowers, under Section 3005 of the Act, the United States Environmental Protection Agency ("EPA") to establish a permit program for hazardous waste treatment, storage, and disposal ("TSD") facilities.

Under Section 3006 of the Act, 42 U.S.C. § 6926, EPA may, if certain criteria are met, authorize a state to operate a hazardous waste program in lieu of the Federal program. Although the State of New Jersey ("NJ") was granted final authorization to operate its hazardous waste program on February 21, 1985, this authorization specifically excluded state administration of the new requirements and prohibitions imposed by HSWA. By the expressed terms of Section 3006(g) of the Act, 42 U.S.C. § 6926(g), the new HSWA provisions take effect in all states, authorized or unauthorized, simultaneously. Until EPA formally authorizes a state to implement the HSWA provisions, along with the other elements of the state hazardous waste program, EPA will implement the HSWA provisions, including the issuance of full or partial facility permits.

Until EPA authorizes NJ to administer the provisions in HSWA, NJ shall issue the non-HSWA portion of the RCRA permit and EPA will issue the HSWA portion of the permit. Only when both portions are issued, will the applicant be deemed to have a full RCRA permit.

The permit which EPA is proposing constitutes the HSWA portion of the RCRA permit.

## FACILITY DESCRIPTION

The facility (Lenox China, a Division of Lenox, Incorporated) is located on Tilton Road, in Pomona, Atlantic County, New Jersey on fifty six (56) acres of land. The facility has been manufacturing since 1954 ceramic dinnerware and giftware. The dinnerware includes fine china and casual dinnerware, and the giftware includes vases, bowls, serving pieces, candy dishes, and special collections. Processes involved in the manufacture of the products are blending of earthen clay and alumino-silicates, molding and plastering, firing, coating and glazing with glass formed from lead compounds, and etching to add patterns and designs.

## GENERATION AND MANAGEMENT OF WASTES

The coating and glazing process generates lead-containing wastewater. The wastewater is discharged to the on-site industrial waste treatment plant for treatment. The sludge generated from the industrial waste treatment plant is dewatered and sent off-site for disposal. The treated wastewater is discharged to a surface water course through the point source permitted by the New Jersey Department of Environmental Protection and Energy (NJDEPE) under the New Jersey Pollution Discharge Elimination System (NJPDES)/Discharge to Surface Water (DSW). The industrial waste treatment plant has been upgraded twice. The oldest industrial waste treatment plant (1954-1970) consisted of the Glaze Basin, the Slip Basin, and the Tilton Road Pond. The next industrial waste treatment plant (1970-1987) consisted of the Slip Basin, Equalization Sump, the Clarifier, Vacuum Filter, the Polishing Lagoon, and the Tilton Road Pond. The present industrial waste treatment plant consists of New Sump, the Surge Tank, the Clarifiers, Vacuum Filter, the Polishing Lagoon, and the Tilton Road Pond.

The etching process uses trichloroethylene as a degreaser and generates sludges containing trichloroethylene. The sludge is collected in a drum located in the degreaser sludge pit outside the production process building. Once the drum at the degreaser sludge pit is filled, the drum is removed by a forklift to the drum storage area. Drums containing the sludge are stored in the drum storage area and eventually are sent off-site for disposal.

## RCRA REGULATED UNITS AND THEIR STATUS

The Glaze basin and the Slip Basin are RCRA regulated units and are subject to the State-delegated RCRA program. The Glaze Basin and the Slip Basin were closed in 1988 and in 1990 respectively. NJDEPE issued a permit in July 1990 to require post-closure groundwater monitoring for the Glaze Basin. Post-closure care requirements for the Slip Basin will be required by the post-closure permit to be jointly issued by the NJDEPE with this HSWA

permit. The drum storage area was subject to permit requirements but was closed and decontaminated. It is currently being used to store hazardous waste less than 90 days. The waste in the storage area is eventually sent off-site for disposal.

#### GROUNDWATER

The groundwater underlying parts of the facility is contaminated with trichloroethylene. The investigations conducted by Lenox China show that the groundwater contamination might have been caused by releases from the drum storage area and the degreaser sludge pit. Furthermore, the facility has conducted studies to determine measures available for the remediation of the contaminated groundwater. This HSWA permit and the post-closure permit to be jointly issued by NJDEPE will require, if determined necessary, the Permittee to implement the remedial measures for the contaminated groundwater.

#### RCRA FACILITY ASSESSMENT SUMMARY

Section 3004(u) of the Act, 42 U.S.C. § 6924(u) and its corresponding regulations published in 40 C.F.R. § 264.101 require corrective action for all releases of hazardous wastes or hazardous constituents from any solid waste management unit ("SWMU"), regardless of when wastes were placed in the unit. The corrective action implementation process includes a RCRA Facility Assessment ("RFA"), a RCRA Facility Investigation ("RFI"), a Corrective Measures Study ("CMS"), and a Corrective Measures Implementation ("CMI") phase.

The RFA for the Pomona, New Jersey Lenox China facility was a two-phase study which included a Preliminary Review ("PR") and a Visual Site Inspection ("VSI"). EPA and NJDEPE completed the PR report in January 1986. A VSI was conducted on January 8, 1986, during which all of the previously discovered SWMUs were observed. Based on the PR and VSI, the SWMUs were characterized as to their release potential and evaluated as to which media could potentially be impacted by such potential releases.

The PR, VSI and other inspections conducted at the site by EPA or NJDEPE were considered in the preparation of the RFA report for Lenox China. The RFA report, completed by EPA with support of NJDEP in March 1989, recommends assessment of potential releases for seven SWMUs and further investigative actions for four SWMUs. The RFA report is available for review at U.S. EPA Region II, Permits Administration Branch, Room 505, 26 Federal Plaza, New York, New York 10278.

## HSWA PERMIT

This HSWA permit requires the Permittee to:

1. Determine the nature, extent, direction, and rate of migration of hazardous waste, including hazardous constituents, in soils, groundwater, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
2. Certify annually that the generation of hazardous waste is minimized to the extent practicable and submit and implement a hazardous waste reduction plan;
3. Comply with the land disposal restrictions;
4. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSWA regulations promulgated on July 21, 1990;
5. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and
6. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

~~UNITED STATES ENVIRONMENTAL PROTECTION AGENCY~~  
~~HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984 PERMIT~~

Permittee: Lenox China, a Division of  
Lenox, Incorporated  
Tilton Road  
Pomona, New Jersey 08240

I.D. Number: NJD002325074  
Effective Date: Draft  
Expiration Date: Draft

This permit is issued by the United States Environmental Protection Agency ("EPA" or "Agency") under authority of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act ("RCRA") of 1976, and the Hazardous and Solid Waste Amendments ("HSWA") of 1984, 42 U.S.C. §§ 6901-6991 (the "Act") and EPA regulations promulgated pursuant thereto, to Lenox China, a Division of Lenox, Incorporated (hereafter called the "Permittee"), to operate a hazardous waste management facility located at Pomona, New Jersey.

In accordance with HSWA, this permit requires the Permittee to:

1. Determine the nature, extent, direction, and rate of migration of hazardous waste, including hazardous constituents, in soils, groundwater, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
2. Certify annually that the generation of hazardous waste is minimized to the extent practicable, and submit and implement a hazardous waste reduction plan;
3. Comply with the land disposal restrictions;
4. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSWA regulations promulgated on July 21, 1990;
5. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and
6. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

This permit, in conjunction with the State post-closure permit to be jointly issued by the New Jersey Department of Environmental Protection and Energy ("NJDEPE" or the "Department") under the New Jersey Pollution Discharge Elimination System (NJPDES)/Discharge to Groundwater (DGW), constitutes the full RCRA post-closure permit for this facility.

The Permittee must comply with all the terms and conditions of this permit. This permit consists of the conditions contained herein (Module I, pages 1 through 13; Module II, pages 1 through 3; Module III, pages 1 through 28; Module IV, page 1 through 2; Module V, pages 1 through 2; Module VI, page 1; Module VII, page 1, and the following appendices: Appendix A, Appendix B, Appendix C, and Appendix D) and the applicable regulations contained in 40 C.F.R. Parts 124, 260 through 264, 268, and 270 as specified in the permit. Applicable regulations are those which are in effect on the date of issuance of this permit, except as provided in 40 C.F.R. § 124.86(c) for RCRA permits being processed under Subpart E or F of Part 124 (see 40 C.F.R. § 270.32(c)). A permit may be modified, however, to incorporate new regulations pursuant to 40 C.F.R. § 270.41(a)(3) and 40 C.F.R. § 270.32 (c).

This permit is based on the assumption that the information provided in Permittee's applications, and all succeeding revisions and data submissions, is accurate. The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time may be grounds for the termination, revocation and reissuance, or modification of this permit (see 40 C.F.R. §§ 270.41, 270.42 and 270.43) and potential enforcement action. The Permittee must inform EPA of any deviation from or changes in the information which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of Draft and shall remain in effect until Draft unless revoked and reissued, modified or terminated in accordance with 40 C.F.R. §§ 270.41, 270.42 or 270.43, or continued in accordance with 40 C.F.R. § 270.51(a).

Constantine Sidamon-Eristoff  
Regional Administrator  
United States Environmental Protection Agency  
Region II

Date



TABLE OF CONTENTS

<u>STATEMENT OF PERMIT</u>	i-ii
<u>TABLE OF CONTENTS</u>	iii-v
<u>MODULE I - STANDARD CONDITIONS</u>	I-1
A. Effect of Permit.	I-1
B. Permit Actions.	I-1
C. Permit Conditions.	I-1
D. Permit Submittals.	I-2
D.1 Effect of Permit.	I-2
D.2 Submittal Modifications	I-2
E. Severability	I-2
F. Duties and Requirements	I-2
F.1 Duty to Comply	I-2
F.2 Duty to Reapply	I-3
F.3 Permit Expiration and Continuation	I-3
F.4 Need to Halt or Reduce Activity Not a Defense	I-3
F.5 Duty to Mitigate	I-3
F.6 Proper Operation and Maintenance	I-4
F.7 Duty to Provide Information	I-4
F.8 Inspection and Entry	I-4
F.9 Monitoring and Records	I-5
F.10 Reporting Planned Changes	I-6
F.11 Anticipated Noncompliance	I-7
F.12 Transfer of Permit	I-7
F.13 Compliance Schedules	I-7
F.14 Immediate Reporting of Releases	I-7
F.15 Twenty-Four Hour Reporting	I-8
F.16 Additional Noncompliance Reporting	I-9
F.17 Other Information	I-10
G. Documents to be Maintained at the Facility	I-10
H. Reports, Notifications and Submissions to the Regional Administrator	I-10
I. Signatory Requirements	I-11
J. Confidential Information	I-11
K. Permit Modifications	I-11
L. Definitions	I-11
L.1 Action Level	I-11
L.2 Area of Concern	I-12
L.3 EPA	I-12
L.4 Facility	I-12
L.5 Hazardous Constituents	I-12
L.6 Hazardous Waste	I-12
L.7 Regional Administrator	I-12
L.8 Release	I-13
L.9 Solid Waste Management Unit	I-13
M. Dispute Resolution	I-13

MODULE II - FACILITY DESCRIPTION

A.	General Description	II-1
B.	Generation and Management of Wastes	II-1
C.	RCRA Regulated Units and Their Status	II-1
D.	Groundwater	II-2
E.	RCRA Facility Assessment Summary	II-2
F.	Permit Status	II-3
G.	HSWA Permit	II-3

MODULE III - CORRECTIVE ACTION REQUIREMENTS FOR SOLID WASTE MANAGEMENT UNITS

A.	Applicability.	III-1
	A.1 Statute and Regulations.	III-1
	A.2 Summary of Corrective Action Process.	III-1
	A.3 Solid Waste Management Units.	III-3
B.	Standard Conditions for Corrective Action.	III-5
	B.1 Work Plans.	III-5
	B.2 Monitoring and Records.	III-5
	B.3 Health/Safety Plans.	III-5
	B.4 Guidance Documents.	III-6
	B.5 Prior Submittals.	III-6
	B.6 Interim Corrective Measures.	III-6
	B.7 Determination of No Further Action.	III-8
	B.8 Reporting.	III-9
	B.9 Compliance with Governmental Requirements.	III-10
	B.10 Notifications.	III-11
C.	Assessment of Newly Identified Solid Waste Management Units (SWMUs)	III-12
	C.1 Notification.	III-12
	C.2 SWMU Assessment Report.	III-12
	C.3 SWMU Sampling and Analysis Plan.	III-12
	C.4 Subsequent Assessment Actions.	III-13
	C.5 SWMU Sampling and Analysis Report.	III-13
	C.6 Assessment Conclusions.	III-14
D.	Notification Requirements for Newly-Discovered Releases at SWMUs.	III-14
E.	Corrective Action Requirements.	III-14
	E.1 RCRA Facility Investigation (RFI) Workplan.	III-14
	E.2 RFI Workplan Implementation.	III-17
	E.3 RFI Final Report and Summary Report.	III-17
	E.4 Current Interim Corrective Measures.	III-18
	E.5 Corrective Measures Study (CMS) Plan.	III-19
	E.6 CMS Implementation.	III-21
	E.7 CMS Final Report.	III-21
	E.8 Corrective Measures Selection.	III-22
	E.9 Permit Modification for Corrective Measure(s).	III-25

E.10 Modification of the Compliance Schedule.	III-26
E.11 Corrective Action through Post-Closure.	III-27

MODULE IV - WASTE MINIMIZATION

A. Submittal Requirements.	IV-1
B. Waste Minimization Report.	IV-1
C. Hazardous Waste Reduction Plan (HWRP).	IV-1
D. Implementation of Waste Reduction Techniques.	IV-2

MODULE V - LAND DISPOSAL RESTRICTIONS

A. Background.	V-1
B. Storage of Restricted Wastes.	V-1
C. Land Disposal of Restricted Wastes.	V-1
D. Restriction Dates	V-1

MODULE VI - ORGANIC AIR EMISSION STANDARDS FOR PROCESS VENTS AND EQUIPMENT LEAKS

A. Background.	VI-1
B. Compliance Schedule.	VI-1

MODULE VII - TOXICITY CHARACTERISTICS

A. Background	VII-1
B. Applicability	VII-1

APPENDIX A - SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATIONAPPENDIX B - SCOPE OF WORK FOR A CORRECTIVE MEASURES STUDYAPPENDIX C - COMPLIANCE SCHEDULEAPPENDIX D - COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO EPA

## MODULE I - STANDARD CONDITIONS

- A. EFFECT OF PERMIT. This Permit authorizes only the management of hazardous waste expressly described in this Permit and does not authorize any other activities. Compliance with the terms of this Permit constitutes compliance, for purposes of enforcement with Subtitle C ("Hazardous Waste Management") of the Act. Issuance of this Permit does not convey any property rights of any sort, or any exclusive privilege; nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local laws or regulations. 40 C.F.R. §§ 270.4, 270.30(g). Compliance with the terms of this Permit does not constitute a defense to any action brought under Sections 3013, 3008(h) or 7003 of the Act (42 U.S.C. §§ 6934, 6928(h), and 6973), Sections 106(a), 104, 107 and/or 122 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") of 1980 (42 U.S.C. §§ 9601 et seq.), as amended, or any other law and corresponding regulations governing protection of public health and the environment.
- B. PERMIT ACTIONS. This Permit may be modified, revoked and reissued, or terminated for cause as specified in 40 C.F.R. §§ 270.41, 270.42 and 270.43. The filing of a request for a permit modification, revocation and reissuance, termination the notification of planned changes, anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any condition of this Permit. 40 C.F.R. §270.30(f). Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.
- C. PERMIT CONDITIONS. Pursuant to Section 3005(c)(3) of the Act, 42 U.S.C. § 6925(c)(3), promulgated as regulation 40 C.F.R. § 270.32(b), this Permit contains those terms and conditions the Regional Administrator determines necessary to protect human health and the environment. If not otherwise specified in this Permit, all the requirements of 40 C.F.R. §§ 270.30, 270.31, 270.32 and 270.33 are hereby incorporated into this Permit by reference.

## D. PERMIT SUBMITTALS.

1. Effect of Permit. All plans, reports and schedules required by the terms of this Permit are, upon approval by EPA, except as otherwise noted in this Permit where approval is not required, incorporated by reference into this Permit. Upon incorporation, the provisions of each such document shall be binding upon Permittee and have the same legal force and effect as the requirements of this Permit.
2. Submittal Modifications. Permittee shall submit draft plans and reports required by this Permit to EPA for review and comment. Unless otherwise specified, EPA shall review any plan, report, specification or schedule submitted pursuant to, or required by this Permit, and provide its written approval/disapproval, comments and/or modifications to the Permittee. Unless otherwise specified by EPA, the Permittee shall submit a revised proposal within thirty (30) calendar days of its receipt of EPA's written comments and/or modifications. Any such revised proposal submitted by the Permittee shall incorporate EPA's comments and/or modifications. EPA will then approve the revised proposal or modify the proposal and approve it with any such modifications. The revised proposal, as approved by EPA, shall become final. All final approvals shall be given to the Permittee in writing.

E. SEVERABILITY. The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstance is stayed or held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. 40 C.F.R. § 124.16(a).

## F. DUTIES AND REQUIREMENTS.

1. Duty to Comply. The Permittee shall comply with all conditions of this Permit, except that the Permittee need not comply with the conditions of this Permit to the extent and for the duration such noncompliance is authorized in an emergency permit (see 40 C.F.R. § 270.61). Any noncompliance with this Permit, except under the terms of an emergency permit, constitutes a violation of the Act and is grounds for: 1) an enforcement action; 2) permit termination, revocation and reissuance, modification; or 3) denial of a permit renewal application. 40 C.F.R. § 270.30(a).

2. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new permit at least one hundred and eighty (180) days before this Permit expires, unless the Regional Administrator grants permission for a later date which is not later than the expiration date of the existing permit. 40 C.F.R. §§ 270.10(h) and 270.30(b).
3. Permit Expiration and Continuation. This Permit will be in effect for the time period stated on page i, which must not exceed ten (10) years. Each permit for a land disposal facility shall be reviewed by the Regional Administrator five (5) years after the date of permit issuance or reissuance and shall be modified as necessary, as provided in 40 C.F.R. § 270.41 (40 C.F.R. § 270.50). However, as set forth in 40 C.F.R. § 270.51, as long as EPA is the permit issuing authority for HSWA, this Permit and all conditions herein will remain in effect beyond this Permit's expiration date if the Permittee has submitted a timely, complete application (40 C.F.R. §§ 270.13 through 270.23 and 270.10) and through no fault of the Permittee, the Regional Administrator has not issued a new permit as set forth in 40 C.F.R. § 124.15.

If the State, at the time of permit renewal, has permitting authority under 40 C.F.R. Part 271 for HSWA, and if the Permittee has submitted a timely and complete application under State law and regulations, the terms and conditions of this Permit continue in force beyond the expiration date of the Permit, but only until the effective date of the State's issuance or denial of a State permit which includes measures pursuant to HSWA.
4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit. 40 C.F.R. § 270.30(c).
5. Duty to Mitigate. In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. 40 C.F.R. § 270.30(d).

6. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit. 40 C.F.R. § 270.30(e).
7. Duty to Provide Information. The Permittee shall furnish to the Regional Administrator, within a reasonable time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this Permit. 40 C.F.R. §§ 270.30(h) and 264.74(a).
8. Inspection and Entry. The Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
  - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
  - d. Sample or monitor, at reasonable times, for the purposes of assuring compliance with this Permit or as otherwise authorized, any substances or parameters at any location.

40 C.F.R. §§ 270.30(i)(1-4) and 264.74(a).

## 9. Monitoring and Records.

- a. Representativeness of Samples and Measurements. Samples and measurements taken for the purpose of monitoring all media shall be representative of the monitored activity. 40 C.F.R. § 270.30(j)(1). The method used to obtain a representative sample of the waste or environmental media to be analyzed must be the appropriate method from Appendix I of 40 C.F.R. Part 261 or an equivalent method approved by the Regional Administrator. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA Publication SW-846, as currently amended), or an equivalent method approved by the Regional Administrator. 40 C.F.R. §§ 260.21 and 270.6.
- b. Quality Assurance Program. The Permittee shall conduct a quality assurance program to ensure that the monitoring data are technically accurate and statistically valid. The quality assurance program shall be in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA Publication SW-846, as currently amended) and other requirements specified in this Permit and approved by EPA. 40 C.F.R. §§ 270.30(e) and 270.6.
- c. Minimum QA/QC Submittals. The minimum Quality Assurance/Quality Control data and information that shall be delivered with all sample analyses required by this Permit are tabulated in Appendix D of this Permit.
- d. Retention of Records. The Permittee shall retain, for the effective term of this Permit, all records and data used to complete the application for this Permit. 40 C.F.R. §§ 270.10(i) and 270.30(j)(2).

The Permittee shall also retain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well. 40 C.F.R. § 270.30(j)(2).



In addition the Permittee shall also retain records of all other media monitoring, if required, including calibration and maintenance records and all original strip chart recordings for continuous air monitoring instrumentation, copies of all reports and records required by this Permit, and the certification required by 40 C.F.R. § 264.73(b)(9), for the life of the facility. 40 C.F.R. § 270.30(j)(2). These periods may be extended by requests of the Regional Administrator at any time and are automatically extended during the course of unresolved enforcement action regarding the facility.

Records to be kept for the active life of the facility include only raw data (i.e., laboratory and field measurements) results. QA/QC data validation records need only be kept for the effective term of this Permit.

- e. Contents of Monitoring Records. Records for monitoring information shall include:
  - i. The date, exact place, and time of sampling or measurements;
  - ii. The individual(s) who performed the sampling or measurements;
  - iii. The date(s) analyses were performed;
  - iv. The individual(s) who performed the analyses;
  - v. The sampling techniques or methods used;
  - vi. The analytical techniques or methods used; and
  - vii. The results of such analyses.
- 40 C.F.R. § 270.30(j).
- f. Monitoring Reports. Monitoring results must be reported at the intervals specified elsewhere in this Permit. 40 C.F.R. § 270.30(l)(4).

- 10. Reporting Planned Changes. The Permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. 40 C.F.R. § 270.30(l)(1).

11. Anticipated Noncompliance. The Permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with this Permit's requirements. This notice must include a description of all incidents of noncompliance reasonably expected to result from the proposed changes. 40 C.F.R. § 270.30(1)(2).
12. Transfer of Permit. This Permit is not transferable to any person unless notice has been given to the Regional Administrator and this Permit has been modified, or revoked and reissued, or a modification made to identify the new permittee and to incorporate such other requirements as may be necessary. 40 C.F.R. §§ 270.30(1)(3) and 270.40.
13. Compliance Schedules. Reports of compliance or noncompliance with or any progress reports on, interim and/or final requirements contained in any compliance schedule of this Permit shall be submitted no later than fourteen (14) calendar days following each schedule date. 40 C.F.R. §§ 270.30 (1)(5) and 270.33(a)(3).

The Permittee shall comply with all parts of the Compliance Schedule included in Appendix C of this Permit.

14. Immediate Reporting of Releases.
  - a. Whenever there is an imminent or actual emergency situation, the emergency coordinator as designated in the contingency plan (or a designee when the emergency coordinator is on call) must immediately:
    - i. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and
    - ii. Notify appropriate State or local agencies with designated response roles if their help is needed.

40 C.F.R. §264.56(a)(1-2).

  - b. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, the coordinator must report the findings as follows:

- i. If the coordinator's assessment indicates that evacuation of local areas may be advisable, she/he must immediately notify appropriate local authorities. She/he must be available to help appropriate officials decide whether local areas should be evacuated; and
- ii. The coordinator must immediately notify either the government official designated as the on-scene coordinator for that geographical area in the applicable regional contingency plan or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:
  - (1) Name and telephone number of reporter;
  - (2) Name and address of facility;
  - (3) Time and type of incident (e.g., release, fire);
  - (4) Name and quantity of material(s) involved, to the extent known;
  - (5) The extent of injuries, if any; and
  - (6) The possible hazards to human health, or the environment, outside the facility.

40 C.F.R. § 264.56(d).

## 15. Twenty-four Hour Reporting.

- a. The Permittee shall orally report to the Regional Administrator any noncompliance with this Permit which may endanger health or the environment within 24 hours from the time the Permittee becomes aware of the circumstances, including:
  - i. Information concerning the release of any hazardous waste, including hazardous constituents, that may cause an endangerment to public drinking water supply sources;
  - ii. Any information of a release or discharge of hazardous waste, including hazardous constituents, or a fire or explosion at the facility, which could threaten the environment or human health outside the facility. The description of the occurrence

and its cause shall include:

- (1) Name, address, and telephone number of the owner or operator;
- (2) Name, address, and telephone number of the facility;
- (3) Date, time, and type of incident;
- (4) Name and quantity of material(s) involved;
- (5) The extent of injuries, if any;
- (6) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
- (7) Estimated quantity and disposition of recovered material that resulted from the incident.

40 C.F.R. § 270.30(1)(6)(i-ii).

- b. A written submission shall also be provided to the Regional Administrator within five (5) calendar days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee need not comply with the 5-day written notice requirement if the Regional Administrator waives that requirement in favor of a written report within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. 40 C.F.R. § 270.30(1)(6)(iii).

16. Additional Noncompliance Reporting. The Permittee shall report all instances of noncompliance not required to be reported under Module I, Conditions F.9.f, F.13 or F.15. Such additional noncompliance shall be reported at the time monitoring and noncompliance reports are submitted. The reports shall contain the information listed in Module I, Condition F.15, and all other relevant information. 40 C.F.R. §

270.30(1)(10).

17. Other Information. Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, the Permittee shall promptly submit such new or correct facts or information to the Regional Administrator. 40 C.F.R. § 270.30(1)(11).

G. DOCUMENTS TO BE MAINTAINED AT THE FACILITY. The Permittee shall maintain at the facility all documents required by this Permit, and amendments, revisions and modifications to these documents.

H. REPORTS, NOTIFICATIONS AND SUBMISSIONS TO THE REGIONAL ADMINISTRATOR. All reports, notifications or other submittals required by this Permit are to be submitted to the Regional Administrator unless otherwise directed in this Permit and sent certified mail or given to:

Two (2) copies:

United States Environmental Protection Agency  
Air and Waste Management Division  
Hazardous Waste Facilities Branch  
Region II  
26 Federal Plaza  
New York, New York 10278

Copies shall also be sent to the following addresses:

One (1) copy:

United States Environmental Protection Agency  
Office of Policy and Management  
Permits Administration Branch  
Region II  
26 Federal Plaza  
New York, New York 10278

One (1) copy:

New Jersey Department of Environmental Protection  
Hazardous Waste Regulation Element  
Bureau of Hazardous Waste Engineering  
33 Arctic Parkway  
CN-028  
Trenton, New Jersey 08624

One (1) copy:

New Jersey Department of Environmental Protection  
Ground Water Quality Element  
Bureau of Groundwater Pollution Abatement  
401 East State Street  
Cn-029  
Trenton, New Jersey 08625

- I. SIGNATORY REQUIREMENTS. All reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 C.F.R. §§270.11. 40 C.F.R. § 270.30(k).
- J. CONFIDENTIAL INFORMATION. The Permittee may claim confidential any information required to be submitted by this Permit in accordance with 40 C.F.R. § 270.12 and 40 C.F.R. Part 2, Subpart B.
- K. PERMIT MODIFICATION. This Permit may be modified as allowed under 40 C.F.R. §§ 270.41 and 270.42, or as specified in Conditions E.9 and E.10 of Module III of this Permit. Modifications to this Permit may be made by the Regional Administrator for cause in accordance with 40 C.F.R. § 270.41. Modifications to this Permit may also be requested by the Permittee as is provided for in 40 C.F.R. § 270.42.
- L. DEFINITIONS. For the purpose of this Permit, terms used herein shall have the same meaning as those set forth in 40 C.F.R. Parts 260 through 270, unless this Permit specifically states otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.
  - 1. Action Levels. For purposes of this Permit, action levels are hazardous constituent concentrations that are protective of human health or the environment. Where available, action levels are based on appropriate promulgated standards established for a specific environmental medium. When such promulgated standards are not available, action levels are media specific, hazardous constituent concentrations derived from non-promulgated human health-based levels and environmental-based levels. An action level may be set at the background level for a hazardous constituent for which data are inadequate to set a human health or environmental health-based level.

2. Area of Concern (AOC). Pursuant to the authority granted by 40 C.F.R. § 270.32(b)(2), an area of concern is hereby defined for purposes of this permit to mean an area at the facility or an off-site area, which is not at this time known to be a solid waste management unit (SWMU), where hazardous waste and/or hazardous constituents are present or are suspected to be present as a result of a release from the facility. The term shall include area(s) of potential or suspected contamination as well as actual contamination. Such area(s) may require study and a determination of what, if any corrective action may be necessary. All permit references to, and conditions for SWMUs shall also apply to areas of concern.
3. EPA. The United States Environmental Protection Agency.
4. Facility. All contiguous land, structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments or combination of them). For the purposes of implementing Corrective Action "Facility" means all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.
5. Hazardous Constituents. Those constituents identified in Appendix VIII of 40 CFR Part 261, or any constituent identified in Appendix IX of 40 CFR Part 264.
6. Hazardous Waste. For the purposes of Corrective Action and SWMUs, hazardous waste means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The term hazardous waste includes hazardous constituents as defined above and hazardous waste listed and identified in 40 C.F.R. § 261.3.
17. Regional Administrator. The Regional Administrator of the United States Environmental Protection Agency for Region II, his designee or authorized representative.

8. Release. For purposes of this Permit release includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents), of any hazardous waste, including hazardous constituent, unless expressly authorized under the terms of this Permit.
9. Solid Waste Management Unit (SWMU). A SWMU includes any discernible waste management unit from which solid and/or hazardous waste, including hazardous constituents, have migrated or may migrate, irrespective of whether the unit was intended for the management of hazardous or solid wastes as those terms are defined in § 1004(5) and (27) of RCRA, 42 U.S.C. § 6903(5) and (27) and in 40 C.F.R. §§ 261.2 and 261.3. These units include, but are not limited to: landfills, surface impoundments, waste piles, land treatment units, tanks, elementary neutralization units, transfer stations, container storage areas, incinerators, injection wells, recycling units, and closed and abandoned units. Certain areas associated with production processes which have become contaminated as a result of routine, and systematic releases of wastes, or hazardous constituents from wastes, are also considered SWMUs. All permit references to, and conditions for SWMUs shall also apply to AOCs.
- M. DISPUTE RESOLUTION. The Permittee shall use its best efforts to informally and in good faith resolve all disputes or differences of opinion. If, however, disputes arise concerning submissions required under this Permit, including, but not limited to, implementation of any plans, approval of documents, scheduling of any of the work, selection, performance or completion of any corrective action, or any other obligation required under this Permit, the Permittee shall notify EPA immediately of such disputes and, within thirty (30) calendar days of notification, the Permittee shall submit a written statement to the EPA, that argues its position. The written argument shall set forth the Permittee's specific points of contention; the Permittee's position and reason for its position; and any additional matters that the Permittee considers necessary or relevant for the EPA's determination. If the dispute cannot be resolved informally within sixty (60) calendar days of EPA receipt of the written argument, EPA will provide the Permittee its decision on the dispute which shall be incorporated into this Permit.



## MODULE II - FACILITY DESCRIPTION

### A. GENERAL DESCRIPTION

The facility (Lenox China, a Division of Lenox, Incorporated) is located on Tilton Road, in Pomona, Atlantic County, New Jersey on fifty six (56) acres of land. The facility has been manufacturing since 1954 ceramic dinnerware and giftware. The dinnerware includes fine china and casual dinnerware, and the giftware includes vases, bowls, serving pieces, candy dishes, and special collections. Processes involved in the manufacture of the products are blending of earthen clay and alumino-silicates, molding and plastering, firing, coating and glazing with glass formed from lead compounds, and etching to add patterns and designs.

### B. GENERATION AND MANAGEMENT OF WASTES

The coating and glazing process generates lead-containing wastewater. The wastewater is discharged to the on-site industrial waste treatment plant for treatment. The sludge generated from the industrial waste treatment plant is dewatered and sent off-site for disposal. The treated wastewater is discharged to a surface water course through the point source permitted by the New Jersey Department of Environmental Protection and Energy (NJDEPE) under the New Jersey Pollution Discharge Elimination System (NJPDES)/Discharge to Surface Water (DSW). The industrial waste treatment plant has been upgraded twice. The oldest industrial waste treatment plant (1954-1970) consisted of the Glaze Basin, the Slip Basin, and the Tilton Road Pond. The next industrial waste treatment plant (1970-1987) consisted of the Slip Basin, Equalization Sump, the Clarifier, Vacuum Filter, the Polishing Lagoon, and the Tilton Road Pond. The present industrial waste treatment plant consists of New Sump, the Surge Tank, the Clarifiers, Vacuum Filter, the Polishing Lagoon, and the Tilton Road Pond.

The etching process uses trichloroethylene as a degreaser and generates sludges containing trichloroethylene. The sludge is collected in a drum located in the degreaser sludge pit outside the production process building. Once the drum at the degreaser sludge pit is filled, the drum is removed by a forklift to the drum storage area. Drums containing the sludge are stored in the drum storage area and eventually are sent off-site for disposal.

### C. RCRA REGULATED UNITS AND THEIR STATUS

The Glaze Basin and the Slip Basin are RCRA regulated units and are subject to the State-delegated RCRA program. The Glaze Basin and the Slip Basin were closed in 1988 and in 1990 respectively. NJDEPE issued a permit in July 1990 to require post-closure groundwater monitoring for the Glaze Basin. Post-closure care

requirements for the Slip Basin will be required by the State post-closure permit to be jointly issued with this HSWA permit. The drum storage area was subject to permit requirements but was closed and decontaminated. It is currently being used to store hazardous waste less than 90 days. The waste in the storage area is eventually sent off-site for disposal.

## D. GROUNDWATER

The groundwater underlying parts of the facility is contaminated with trichloroethylene. The investigations conducted by Lenox China show that the groundwater contamination might have been caused by releases from the drum storage area and the degreaser sludge pit. Furthermore, the facility has conducted studies to determine measures available for the remediation of the contaminated groundwater. This HSWA permit, with a State post-closure permit to be issued jointly by NJDEP for the Slip Basin, will require, if determined necessary, the Permittee to implement the remedial measures for the contaminated groundwater.

## E. RCRA FACILITY ASSESSMENT SUMMARY

Section 3004(u) of the Act, 42 U.S.C. § 6924(u) and its corresponding regulations published in 40 C.F.R. § 264.101 require corrective action for all releases of hazardous wastes or hazardous constituents from any solid waste management unit ("SWMU"), regardless of when wastes were placed in the unit. The corrective action implementation process includes a RCRA Facility Assessment ("RFA"), a RCRA Facility Investigation ("RFI"), a Corrective Measures Study ("CMS"), and a Corrective Measures Implementation ("CMI") phase.

The RFA for the Pomona, New Jersey Lenox China facility was a two-phase study which included a Preliminary Review ("PR") and a Visual Site Inspection ("VSI"). EPA and NJDEP completed the PR report in January 1986. A VSI was conducted on January 8, 1986, during which all of the previously discovered SWMUs were observed. Based on the PR and VSI, the SWMUs were characterized as to their release potential and evaluated as to which media could potentially be impacted by such potential releases.

The PR, VSI and other inspections conducted at the site by EPA or NJDEP were considered in the preparation of the RFA report for Lenox China. The RFA report, completed by EPA with support of NJDEP in March 1989, recommends assessment of potential releases for seven SWMUs and further investigative actions for four SWMUs. The RFA report is available for review at U.S. EPA Region II, Permits Administration Branch, Room 505, 26 Federal Plaza, New York, New York 10278.

#### F. PERMIT STATUS

In February 1985, NJDEP was authorized by EPA to implement the State hazardous waste RCRA program in lieu of the EPA's RCRA program. However, the State has not been delegated the program required by HSWA. Therefore, this HSWA permit, in conjunction with the post-closure permit to be issued by NJDEP, will constitute the full RCRA post-closure permit for the facility.

The State post-closure permit, to be jointly issued with this HSWA permit, requires post-closure care for the Slip Basin and groundwater monitoring. In addition, the State permit will also require implementation of a corrective action program similar to the one required by this HSWA permit.

#### G. HSWA PERMIT

This HSWA permit requires the Permittee to:

1. Determine the nature, extent, direction, and rate of migration of hazardous waste, including hazardous constituents, in soils, groundwater, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
2. Certify annually that the generation of hazardous waste is minimized to the extent practicable and submit and implement a hazardous waste reduction plan;
3. Comply with the land disposal restrictions;
4. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSWA regulations promulgated on July 21, 1990;
5. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and
6. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

**DRAFT**

**MODULE III - CORRECTIVE ACTION REQUIREMENTS**  
**FOR SOLID WASTE MANAGEMENT UNITS**

**A. APPLICABILITY**

1. Statute and Regulations. Section 3004(u) of the Act, 42 U.S.C. § 6924(u), and its corresponding regulations published in 40 C.F.R. § 264.101 require corrective action for all releases of hazardous wastes, including hazardous constituents, from any solid waste management unit ("SWMU") at a storage, treatment or disposal facility seeking a permit, regardless of the time at which waste was placed in such unit. Section 3004(v) of the Act, 42 U.S.C. § 6924(v) requires that corrective action be taken beyond the facility boundary where necessary to protect human health and the environment. Pursuant to Section 3005(c) of the Act, 42 U.S.C. § 6925(c), and its corresponding regulations published in 40 C.F.R. § 270.32(b)(2), the Regional Administrator may impose terms and conditions as the Administrator determines necessary to protect human health and the environment.
2. Summary of Corrective Action Process. Corrective action implementation authorized by Section 3004(u) of the Act, 42 U.S.C. § 6924(u) includes: (a) the RCRA Facility Assessment ("RFA"); (b) the RCRA Facility Investigation ("RFI"); and (c) the Corrective Measures ("CM"). The RFA is a three phase process that includes: (a) the Preliminary Review ("PR"); (b) the Visual Site Inspection ("VSI"); and (c) the Sampling Visit ("SV"). The PR is a review of all available information on the individual SWMU(s). During the PR, and in subsequent phases of the RFA, all of the media (i.e., soil, groundwater, surface water/sediment, air and subsurface gas) that could potentially be impacted by the release(s) of hazardous wastes, including hazardous constituents, are evaluated. Based on this review, the SWMUs are characterized as to their release potentials.

Following the PR, a VSI is conducted during which all of the SWMUs, either previously or newly discovered, are observed. While performing this reconnaissance, any signs of spills or leakage, stained soil, stressed vegetation, unit deterioration, or any other conditions that may be indicative of a release are assessed. By means of these observations and the findings of the PR, EPA may require the facility to conduct a Sampling Visit at the areas where releases are suspected.

The SV can involve any or all of the previously described media at any given SWMU. For those units where releases are clearly demonstrated in the PR and/or VSI, the SV can be avoided leaving the unit(s) to be addressed in the RFI.

The RFA includes preparing the RFA report. This report includes the findings of the various RFA activities and recommendations for further action at those units with demonstrated releases of hazardous wastes, including hazardous constituents. In some cases, where an immediate threat to human health or the environment exists, interim corrective measures may be required.

If the RFA concludes that there is a need for further investigative work, the Permittee shall be required to pursue phase two of corrective action, an RFI. The purpose of the RFI is to determine the nature, extent, direction, and rate of migration of hazardous wastes, including hazardous constituents, in soils, groundwater, surface water/sediment, subsurface gas and/or air. Based on these multimedia analyses, the types and concentrations of contaminants present, the boundaries of any contamination (e.g., plumes), and the rate and direction of contaminant movement can be determined in each of the impacted media. Sufficient data shall be generated during the RFI to allow proper assessment of corrective measure alternatives. This may require bench and/or pilot studies to be implemented as part of the RFI. Once all these analyses are reviewed, a RFI report is prepared that provides a summation of the data and recommendations for any needed corrective measures.

The culmination of the Corrective Action Program is Corrective Measures ("CM"). The initial stage of the Corrective Measures phase is the preparation of a Corrective Measures Study ("CMS"). A CMS may be required if concentrations of hazardous constituents in an aquifer, in surface water/sediment, in soils, or in air exceed their action levels for any contaminated medium. Such a study may also be required if individual concentrations of hazardous constituents are at or below action levels, but still may pose a threat to human health or the environment due to site specific exposure conditions. The CMS will address alternative corrective measure strategies that are technologically feasible and reliable and which effectively mitigate and minimize damage to, and provides adequate protection of, human health and the environment. The Permittee will develop the site-specific CMS using target cleanup levels chosen by the Regional

Administrator to be protective of human health and the environment. Where available, they may be promulgated health-based standards, such as Maximum Contaminant Levels ("MCLs") established under the Safe Drinking Water Act. Where promulgated standards are not available, EPA may use other health-based levels, based on Risk-Specific Doses ("RSD") for carcinogens, and Reference Doses ("RfD") for systemic toxicants, or concentration levels protective of the environment, that have undergone scientific review. The CMS report should provide a discussion of the alternative corrective measure strategies studied, addressing technical, institutional, public health, and environmental issues, and develop the conceptual engineering for the alternative action selected by the facility. The CMS may not require extensive evaluation of a number of remedial alternatives where a solution is straight forward or if few solutions exist. Such situations could require the Permittee to submit a highly focused CMS.

Following completion of the CMS, the Regional Administrator will select the corrective measure(s) from the corrective measures evaluated in the CMS. The Regional Administrator will then initiate a permit modification for the selected corrective measure(s). Subsequent to the permit modification, the owner or operator of the facility will be required to demonstrate financial assurance for completing the approved corrective measure(s).

Permit modification for the approved corrective measure(s) will initiate the final stage of corrective measures, Corrective Measures Implementation ("CMI"). The CMI will address the final design, construction, operation, maintenance, and monitoring of the corrective measure or measures selected.

3. Solid Waste Management Units. The conditions of this Module apply to:

- a. All the SWMUs listed in this Module individually or in combinations;
- b. Any additional SWMUs identified during the course of groundwater monitoring, field investigations, environmental audits or other means as described in Module Condition C. below; and

- c. The following SWMUs identified by the RFA report dated March 1989. The descriptions below of the SWMUs and recommended actions to be required under the RFI are taken from the report:

SWMU		Media to be Investigated				
Name	Type*	GW*	Soil	SW/S*	Air	SS/G*
1. Degreaser Sludge Pit	S	Yes	Yes	No	No	No
2. Sludge Disposal Area	LD	Yes	Yes	No	No	No
3. Waste Pile	LD	Yes	Yes	No	No	No
4. Polishing Lagoon	LD	SWMU Assessment Necessary				
5. Tilton Road Pond	LD	SWMU Assessment Necessary				
6. Underground Effluent Transfer Pipe		SWMU Assessment Necessary				
7. Equalization Sump	Tank	SWMU Assessment Necessary				
8. Piping		SWMU Assessment Necessary				
9. Underground Storage Tanks	Tank	SWMU Assessment Necessary				
10. Glaze Basin	LD	RCRA Regulated Unit				
11. Slip Basin	LD	RCRA Regulated Unit				
12. Drum Storage Area	S	RCRA Regulated Unit				
		Yes	Yes	No	No	No
Area of Concern						
13. Area between Monitoring Well #10 and Aloe Street	LD	SWMU Assessment Necessary				

\*GW:Groundwater;SW/S:Surface Water/Sediment;SS/G:Subsurface Gas  
LD:Land Disposal;S:Storage

- i. A first phase RFI (SWMU Assessment) is required for SWMU #4 through #9 and Area of Concern #13. The purpose of the first phase RFI is to confirm any releases from these SWMUs. The first phase RFI differs from a full RFI in the extent and degree of investigations required. Its purpose is for confirmatory sampling, to identify if releases have occurred. The Permittee shall follow Conditions C.3, C.4, C.5, and C.6 of this Module for the first phase RFI.

- ii. A full RFI is required for SWMU #1 through #3 and SWMU #12. The purpose of the full RFI is to determine the nature, rate, direction, and extent of migration of hazardous waste, including or hazardous constituents. The Permittee shall follow Conditions E.1, E.2, and E.3 of this Module for the full RFI.
- iii. SWMUs #10 and #11 are RCRA-regulated units. These units were closed and the closure certifications were submitted. Currently, groundwater is being monitored and will continue to be monitored through a post-closure care period. Within thirty (30) calendar days of the effective date of this Permit, the Permittee shall provide EPA with all groundwater data available for these units, and shall continue to provide EPA with a copy of groundwater data which is required by the State NJPDES/DGW permits. EPA may require additional action, if deemed necessary.

## B. STANDARD CONDITIONS FOR CORRECTIVE ACTION

- 1. Work Plans. All work plans submitted pursuant to this Module shall include:
  - a. Quality Assurance/Quality Control protocols to ensure that data generated is valid and supported by documented procedures;
  - b. Other plans, specifications and protocols, as applicable;
  - c. A schedule for starting specific tasks, completing the work and submitting progress and final reports; and
  - d. Plans for the treatment, storage, discharge or disposal of wastes to be generated by activities described therein.
- 2. Monitoring and Records. Requirements for monitoring and records shall be in accordance with Permit Condition F.9 of Module I of this Permit.
- 3. Health/Safety Plans. The Permittee shall develop, according to applicable Federal, State and local requirements, and submit to the Regional Administrator, health and safety plans that will be implemented to ensure that the health and safety of project personnel,



plant personnel and the general public are protected. These plans are not subject to approval by the Regional Administrator.

4. Guidance Documents. When preparing the submissions described in this Module, the Permittee shall follow applicable guidance documents issued by EPA and the New Jersey Department of Environmental Protection in a manner reflecting reasonable technical considerations.
5. Prior Submittals. The Permittee may have already submitted portions of information, plans, or reports required by this Permit Module and its Appendices to the Regional Administrator pursuant to the terms of previous applications, consent orders, or plans. For those items the Permittee contends were submitted to the Regional Administrator, the Permittee may cite the specific document(s) and page(s) it believes adequately addresses each of the individual items requested by this Permit Module and its Appendices. The references, by document(s) and page(s), shall be placed in the appropriate sections of the submittals that require the referenced information and data. If the Regional Administrator, after a file search, determines that it does not possess any of the referenced information, plans, or reports that the Permittee claims were previously submitted, the Regional Administrator will notify the Permittee and the Permittee shall submit the referenced documents within the time frame specified within the notification.
6. Interim Corrective Measures.
  - a. If at any time it is determined by the Regional Administrator that a release or, based on site-specific circumstances, a threatened release of hazardous waste, including hazardous constituents, from a SWMU, or a combination of SWMUs, poses a threat to human health or the environment, or that such condition jeopardizes the Permittee's ability to comply with any governmental permit, the Permittee shall submit a draft interim corrective measures study to the Regional Administrator for approval within thirty (30) calendar days of notice of such a determination. This study shall consider, among other relevant factors, the character, the extent, direction, the rate of release, the proximity to population, the exposure pathways, the effects of delayed action, and the evaluations of appropriate interim corrective measures. Upon approval of the study by the Regional Administrator, the Permittee shall

implement the required interim corrective measures as specified by the Regional Administrator. Nothing herein shall preclude the Permittee from taking immediate action to address the conditions described herein and promptly notifying the Regional Administrator.

- b. In the event the Permittee discovers a release or, based on site-specific circumstances, a threatened release of hazardous wastes, including hazardous constituents, from a SWMU, or a combination of SWMUs, that poses a threat to human health or the environment, the Permittee shall identify interim corrective measures to mitigate this threat. The Permittee shall immediately summarize the nature and magnitude of the actual or potential threat and nature of the interim measures being considered and notify the Regional Administrator. Within thirty (30) calendar days of notifying the Regional Administrator, the Permittee shall submit to the Regional Administrator, for approval, an interim corrective measures work plan for the interim measures. The Permittee shall implement the measures specified by the Regional Administrator. Nothing herein shall preclude the Permittee from taking immediate action to address the conditions described herein and promptly notifying the Regional Administrator.
- c. The following factors may be considered by the Regional Administrator in determining the need for interim corrective measures:
  - i. Time required to develop and implement a final corrective measure;
  - ii. Actual and potential exposure of human and environmental receptors;
  - iii. Actual and potential contamination of drinking water supplies and sensitive ecosystems;
  - iv. The potential for further degradation of any impacted medium;
  - v. Presence of hazardous waste, including hazardous constituents, in containers that may pose a threat of release;
  - vi. Presence and concentration of hazardous waste, including hazardous constituents, in

soils that have the potential to migrate to ground water or surface water;

- vii. Weather conditions that may affect the current levels of contamination;
- viii. Risks of fire, explosion, or potential exposure to hazardous waste, including hazardous constituents, as a result of an accident or failure of container or handling system; and
- ix. Other situations that may pose threats to human health and the environment.

## 7. Determination of No Further Action

- a. Based on the results of the RFI for a particular SWMU, or combination of SWMUs, and other relevant information, the Permittee may submit an application to the Regional Administrator for a Class III permit modification under 40 C.F.R. § 270.42(c) to terminate the subsequent corrective action requirements of this Module. This permit modification application must contain information demonstrating that there are no releases of hazardous wastes, including hazardous constituents, from such SWMUs that pose a threat to human health or the environment, as well as information required in 40 C.F.R. § 270.42(c), which incorporates by reference 40 C.F.R. §§ 270.13 through 270.21, 270.62, and 270.63.

If, based upon review of the Permittee's request for a permit modification, the results of the RFI, and other information, including comments received during the sixty (60) calendar day public comment period required for Class III permit modifications, the Regional Administrator determines that the release(s) or the suspected release(s) investigated either are non-existent or do not pose a threat to human health or the environment, the Regional Administrator may grant the requested modification.

- b. A determination of no further action shall not preclude the Regional Administrator from implementing the following actions:
  - i. Modifying this Permit at a later date to require the Permittee to perform such investigations as necessary to comply with

the requirements of this Permit Module and its Appendices if new information or subsequent analysis indicates that there are, or are likely to be, releases from SWMUs that may pose a threat to human health or the environment; and

- ii. Requiring continued or periodic monitoring of air, soil, groundwater, surface water/sediment or subsurface gas, if necessary to protect human health and the environment, when site-specific circumstances indicate that release(s) of hazardous waste, including hazardous constituents, are likely to occur from any SWMU.

## 8. Reporting.

- a. The Permittee shall submit, to the Regional Administrator, signed progress reports, as specified in approved work plans pursuant to this Permit, of all activities (i.e., SWMU Assessment, Interim Measures, RCRA Facility Investigation, Corrective Measures Study) conducted pursuant to the provisions of the Corrective Action Schedule of Compliance, beginning no later than thirty (30) calendar days after the Permittee is first required to begin implementation of any requirement herein. These reports shall contain:
  - i. A description of the work completed during the reporting period;
  - ii. Summaries of all findings made during the reporting period, including summaries of laboratory data;
  - iii. Summaries of all changes made during the reporting period;
  - iv. Summaries of all contacts made with representatives of the local community and public interest groups during the reporting period;
  - v. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;
  - vi. Changes in personnel conducting or managing the corrective action activities during the reporting period;

- vii. Projected work for the next reporting period;  
and
- viii. Copies of daily reports, inspection reports,  
laboratory/monitoring data, etc., generated  
during the reporting period.
- b. Upon request, copies of other relevant reports and  
data not identified in Condition B.8.a of this  
Module shall be made available to the Regional  
Administrator.
- c. The Regional Administrator may require the  
Permittee to conduct new or more extensive  
assessments, investigations, or studies, based  
upon information provided in the progress reports  
referred to in Condition B.8.a of this Module  
above, or upon other supporting information.
- d. All plans and schedules required by the conditions  
of this Permit Module and Appendix C of this  
Permit are, upon approval of the Regional  
Administrator, incorporated into this Permit by  
reference and become an enforceable part of this  
Permit. Any noncompliance with such approved  
plans and schedules shall be termed noncompliance  
with this Permit. Extensions of the due dates for  
submittals may be granted by the Regional  
Administrator in accordance with the permit  
modification processes under 40 C.F.R. § 270.41.
- 9. Compliance with Governmental Requirements. During  
investigative activities, interim corrective measures,  
and final corrective measures (including, but not  
limited to, equipment decommissioning, excavation and  
unit demolition) required under this Module, the  
Permittee shall ensure that the transportation,  
treatment, storage, discharge, and disposal of all  
contaminated materials generated as a result of such  
activities (including, but not limited to, soils,  
sediments, liquids, tanks, pipes, pumps, rubble,  
debris, and structural materials) are performed in an  
environmentally sound manner pursuant to all applicable  
Federal, State and local requirements and that is  
protective of public health and the environment.  
Nothing in this Module shall be construed to require  
the Permittee to proceed in a manner which is in  
violation of any such requirements.

## 10. Notifications.

- a. Notification of Groundwater Contamination. If at any time the Permittee discovers that hazardous constituents in groundwater that may have been released from a solid waste management unit at the facility have migrated or are migrating to areas beyond the facility boundary in concentrations that exceed action levels, the Permittee shall, within fifteen (15) calendar days of discovery, provide written notice to the Regional Administrator and any person who owns or resides on the land which overlies the contaminated groundwater.
- b. Notification of Air Contamination. If at any time the Permittee discovers that hazardous constituents in air that may have been released from a solid waste management unit at the facility have or are migrating to areas beyond the facility boundary in concentrations that exceed action levels and that residences or other places at which continuous, long-term exposure to such constituents might occur are located within such areas, the Permittee shall, within fifteen (15) calendar days of such discovery:
  - i. Provide written notification to the Regional Administrator; and
  - ii. Initiate any actions that may be necessary to provide notice to all individuals who have or may have been subject to such exposure.
- c. Notification of Residual Contamination. If hazardous wastes or hazardous constituents in solid waste management units, or which have been released from solid waste management units, will remain in or on the land, including groundwater, after the term of the permit has expired, the Regional Administrator may require the Permittee to record, in accordance with State law, a notation in the deed to the facility property or in some other instrument which is normally examined during titled search that will, in perpetuity, notify any potential purchaser of the property of the types, concentrations, and locations of such hazardous wastes or hazardous constituents. The Regional Administrator may require such notice as part of the corrective measures selection process.

C. ASSESSMENT OF NEWLY IDENTIFIED SOLID WASTE MANAGEMENT UNITS (SWMUS).

1. Notification. The Permittee shall notify the Regional Administrator, in writing, of any additional SWMUs not listed in this Module, which are identified during the course of groundwater monitoring, field investigations, environmental audits, or other means within fifteen (15) calendar days of discovery.
2. SWMU Assessment Report. Within thirty (30) calendar days after notifying of the Regional Administrator, the Permittee shall submit a SWMU Assessment Report. This Report must provide, at a minimum, the following information for each newly identified SWMU:
  - a. Type of unit;
  - b. Location of each unit on a topographic map of appropriate scale;
  - c. Dimensions, capacities and structural description of the unit (supply available engineering drawings);
  - d. Function of unit;
  - e. Dates that the unit was operated;
  - f. Description of the wastes that were placed or spilled at the unit;
  - g. Description of any known releases from the unit (to include groundwater data, soil analyses, air monitoring data, and/or surface water/sediment data);
  - h. The results of any sampling and analysis required for the purpose of determining whether releases of hazardous waste, including hazardous constituents, have occurred, are occurring, or are likely to occur from the unit; and
  - i. Whether this unit, individually or in combination with other units listed in Module Condition A.3. of this Module is a significant source of contaminant release.
3. SWMU Sampling and Analysis Plan. Within thirty (30) calendar days after submittal of the SWMU Assessment Report required in Condition C.2 of this Module, the permittee shall submit a Plan in accordance with most

recent version of the NYSDEC RCRA Quality Assurance Project Plan Guidance, for any sampling and analysis of ground water, land surface and subsurface strata, surface waters/sediment or air, as necessary to determine whether a release of hazardous waste, including hazardous constituents, from such unit(s) has occurred, is likely to have occurred, or is likely to occur. The SWMU Sampling and Analysis Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste, including hazardous constituents, from the newly-discovered SWMU(s) to the environment.

4. Subsequent Assessment Actions. Following submission of the SWMU Assessment Sampling and Analysis Plan set forth in Condition C.3. of this Module, subsequent activities for the Plan shall proceed in accordance with the following schedule:
  - a. Meeting between the Permittee, the Agency and the Department to discuss Plan comments, as appropriate.
  - b. Submission of a revised Plan to the Regional Administrator within thirty (30) calendar days of the above-described meeting. (If the Regional Administrator determines that the above referenced meeting is not necessary, the Permittee shall submit a revised Plan to the Regional Administrator, according to a schedule specified by the Agency, not to exceed forty-five (45) calendar days after Permittee's receipt of Plan comments from the Regional Administrator.); and
  - c. Begin implementation of the Plan within thirty (30) days following written approval from the Regional Administrator for the Plan.
5. SWMU Sampling and Analysis Report. Within thirty (30) calendar days of receipt by the Permittee of validated analytical data generated under the approved SWMU Sampling and Analysis Plan, the Permittee shall submit a SWMU Sampling and Analysis Report to the Regional Administrator. The Report shall follow reporting requirements in the approved Plan and describe all results obtained from the implementation of the approved Plan.



6. Assessment Conclusions. Based on the results of the SWMU Sampling and Analysis Report, the Regional Administrator shall determine the need for further investigations at specific unit(s) covered in either the SWMU Assessment Report or the SWMU Sampling and Analysis Report. If the Regional Administrator determines that such investigations are needed, the Regional Administrator shall by written notification require the Permittee to prepare and submit for approval a RCRA Facility Investigation Work Plan in accordance with Condition E.1 et. seq. of this Module.

D. NOTIFICATION REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES AT SWMUS

The Permittee shall notify the Regional Administrator, in writing, of any release(s) of hazardous waste, including hazardous constituents, discovered during the course of ground-water monitoring, field investigation, environmental auditing, or other activities no later than fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified units, from units for which, based on the findings of the RFA, the Regional Administrator had previously determined that no further investigation was necessary, or from units investigated as part of an RFI. Based on the information provided in the notification the Regional Administrator shall determine the need for further investigation of the release(s). If the Regional Administrator determines that such investigations are needed, the Regional Administrator shall, by written notification, require the Permittee to prepare and submit for approval a RCRA Facility Investigation Work Plan in accordance with Condition E.1 et. seq. of this Module.

E. CORRECTIVE ACTION REQUIREMENTS

1. RCRA Facility Investigation ("RFI") Work Plan

- a. For the previously-identified SWMUs listed in Condition A.3 of this Module, within ninety (90) calendar days of the effective date of this Permit, the Permittee shall submit to the Regional Administrator, for approval a RCRA Facility Investigation Task I Report or Current Conditions required by Task I of the RFI Scope of Work included in this Permit as Appendix A. In the event that there are newly-discovered SWMUs, a Task I Report shall be submitted for approval within ninety (90) calendar days after the written notification by the Regional Administrator that an RFI is required pursuant to Conditions C.6 and/or D of this Module.

- b. For the previously-identified SWMUs listed in Condition A.3 of this Module, within ninety (90) calendar days of the effective date of this Permit, the Permittee shall submit to the Regional Administrator for approval a RCRA Facility Investigation Task II Report on the Pre-Investigation Evaluation of Corrective Measures Technologies required by RFI Scope of Work included in this Permit as Appendix A. In the event that there are newly-discovered SWMUs, a Task II Report shall be submitted for approval within ninety (90) calendar days after the written notification by the Regional Administrator that an RFI is required pursuant to Condition C.6 and/or D of this Module.
- c. For the previously-identified SWMUs listed in Condition A.3 of this Module, within one hundred and fifty (150) calendar days after the effective date of this Permit, the Permittee shall submit for approval a RFI Work Plan to the Regional Administrator to address those units, releases of hazardous waste, including hazardous constituents, and media of concern which require the further investigations. In the event that there are newly-discovered SWMUs, a RFI Work Plan shall be submitted within ninety (90) calendar days after written notification by the Regional Administrator that an RFI is required pursuant to Conditions C.6 and/or D of this Module.
  - i. The Work Plan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste, including hazardous constituents, from specific SWMUs or groups of SWMUs, and their actual or potential receptors. The Work Plan shall detail all proposed activities and procedures to be conducted at the facility and/or off-site, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI.
  - ii. The Work Plan shall discuss sampling, data collection strategy, methods of sample

analysis, as well as quality assurance and data management procedures, including formats for documenting and tracking data and other results of investigations, and health and safety procedures.

- iii. The Work Plan must, at a minimum, address all necessary activities or include descriptions to meet the requirements specified in Tasks III through Task V of the Scope of Work for a RCRA Facility Investigation included in this Permit as Appendix A.
- iv. The Permittee may determine that any of the items required by Tasks III through V of the Scope of Work in Appendix A of this Permit have already been submitted or completed, and therefore, the items are not necessary for completing the RFI of this Permit. The Permittee shall request, within thirty (30) calendar days of the effective date of this Permit, and/or within thirty (30) calendar days of any notification by the Regional Administrator that an RFI is required, that the Administrator review for approval the Permittee's determination. At the time of the request, the Permittee must provide the following information: (1) description of the items and/or summary of findings; (2) description of investigations addressing the items, documents/ reports of the investigations with dates, and summary of the findings; and (3) copies of the documents/reports.

Upon EPA's approval of any previously performed items, the Permittee may delete these from the RFI Work Plan. However, upon EPA's disapproval of items, all activities necessary for the items must be included in the RFI Work Plan.

- d. Following submission of the RFI Work Plan set forth in Condition E.1.c of this Module, subsequent activities for the Plan shall proceed in accordance with the following schedule:
  - i. Meeting between the Permittee, the Agency and the Department to discuss Plan comments, as appropriate.

- ii. Submission of a revised Plan to the Regional Administrator, for approval, within thirty (30) calendar days of the above-described meeting. (If the Regional Administrator determines that the above referenced meeting is not necessary, the Permittee shall submit a revised Plan to the Regional Administrator, according to a schedule specified by the Agency, not to exceed sixty (60) calendar days after Permittee's receipt of Plan comments from the Regional Administrator.)
  - e. The Regional Administrator shall review, for approval as part of the RFI Work Plan, any plans developed pursuant to Condition C.6 of this Module, addressing further investigations of newly-identified SWMUs, or Condition D of this Module, addressing newly-discovered releases from SWMUs. The Regional Administrator shall modify the Schedule of Compliance according to the permit modification procedures under 40 C.F.R. § 270.41, to incorporate these units and releases into the RFI Workplan.
- 2. RCRA Facility Investigation Work Plan Implementation. No later than thirty (30) calendar days after notification by the Regional Administrator approving the RFI Workplan, the Permittee shall begin implementation of the RFI according to the schedules specified in the RFI Workplan. The RFI shall be conducted in accordance with the approved RFI Workplan.
  - 3. RCRA Facility Investigation Final Report and Summary Report
    - a. Within sixty (60) calendar days of receipt by the Permittee of validated analytical data generated under the approved RFI Work Plans, the Permittee shall submit, to the Regional Administrator, RFI Final and Summary Reports, Task VII of the Scope of Work for RFI in Appendix A of this Permit. The RFI Final Report must contain adequate information to support further corrective action decisions at the facility, should such actions be necessary. The RFI Final Report shall describe the procedures, methods, and results of all facility investigations of SWMUs and their releases, including information on the type and extent of contamination at the facility, sources and migration pathways, and actual or potential receptors. It shall also present all information gathered under the approved RFI Work Plan. The

RFI final report will include a comparison of media specific hazardous constituents with their corresponding action levels. The RFI Summary Report shall describe more briefly the procedures, methods, and results of the RFI.

- b. Following submission of the Reports set forth in Condition E.3.a of this Module, subsequent activities for the Reports shall proceed in accordance with the following schedule:
  - i. Meeting between the Permittee, the Agency and the Department to discuss Report comments, as appropriate.
  - ii. Submission of a revised Report to the Regional Administrator within forty-five (45) calendar days of the above-described meeting. (If the Regional Administrator determines that the above referenced meeting is not necessary, the Permittee shall submit a revised Report to the Regional Administrator, according to a schedule specified by the Agency, not to exceed sixty (60) calendar days after Permittee's receipt of Report comments from the Regional Administrator.)
- c. After the Regional Administrator approves the RFI Final Report and Summary Report, the Permittee shall mail the approved Summary Report to all individuals on the facility mailing list established pursuant to 40 C.F.R. § 124.10(c)(1), within thirty (30) calendar days of receipt of approval.
- d. A report summarizing the testing program required by Task VI of the Scope of Work for RFI in Appendix A to this Permit shall be submitted, as a separate document, at the same time as the RFI Final Report.

#### 4. Current Interim Corrective Measures

- a. Within thirty (30) calendar days of the effective date of this Permit, the Permittee shall submit to EPA and NJDEPE all documents including, but not limited to, investigation reports and raw data which are associated with the trichloroethylene-contaminated groundwater. After review of these documents, the Regional Administrator may require the Permittee to implement interim corrective measures.

- b. Within thirty (30) days after the Regional Administrator's determination of a need of the interim corrective measures, the Permittee must submit to the EPA and NJDEPE documents establishing financial assurance for conducting the interim remedial measures. The Permittee must continue to demonstrate financial assurance unless otherwise notified by EPA.

## 5. Corrective Measures Study ("CMS") Plan

- a. Should a CMS be required, the Regional Administrator shall notify the Permittee in writing. This notice shall identify the hazardous constituent(s) which have exceeded action levels as well as those which have been determined to threaten human health and the environment given site specific exposure conditions or due to additive exposure risk. The notification shall specify target cleanup levels for hazardous constituents detected in each medium of concern, and may also specify corrective measure alternatives to be evaluated by the Permittee during the CMS.
- b. The Regional Administrator may require a Corrective Measures Study ("CMS") under the following conditions:
  - i. If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air exceed their corresponding individual action levels;
  - ii. If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air do not exceed their corresponding individual action levels, but additive exposure risk due to the presence of multiple constituents is not protective of human health; or
  - iii. If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air do not exceed corresponding individual action levels, but still pose a threat to human health or the environment, given site-specific exposure conditions.
- c. The CMS will be considered complete upon completion of Tasks I through IV of the Appendix B

of this Permit. Within sixty (60) calendar days after the notification required by Condition E.5.a of this Module, the Permittee shall complete Task I and submit to EPA a Task I report and documents, if any, relevant to other Tasks.

- d. The Permittee shall submit CMS Plan to the Regional Administrator within ninety (90) calendar days after the notification required by Condition E.5.a of this Module.

- i. The CMS Plan shall provide:

- (1) A description of the general approach to investigating and evaluating potential corrective measures;
    - (2) A definition of the overall objectives of the study;
    - (3) The specific plans for evaluating corrective measures to ensure compliance with corrective measure standards;
    - (4) The schedule for conducting the study; and
    - (5) The proposed format for the presentation of information.

- ii. The CMS Plan must address, at a minimum, all necessary activities to complete Tasks II and III of Appendix B of this Permit.

- e. Following submission of the CMS Plan set forth in Condition E.5.d of this Module, subsequent activities for the Plan shall proceed in accordance with the following schedule:

- i. Meeting between the Permittee, the Agency and the Department to discuss Plan comments, as appropriate.

- ii. Submission of a revised Plan to the Regional Administrator within thirty (30) calendar days of the above-described meeting. (If the Regional Administrator determines that the above referenced meeting is not necessary, the Permittee shall submit a revised Plan to the Regional Administrator, according to a schedule specified by the Agency, not to exceed forty-five (45) calendar days after

Permittee's receipt of Plan comments from the Regional Administrator.)

6. Corrective Measures Study Implementation No later than thirty (30) calendar days after the Permittee has received written approval from the Regional Administrator for the CMS Plan, the Permittee shall begin to implement the CMS according to the schedules specified in the CMS Plan. The CMS shall be conducted in accordance with the approved plan submitted pursuant to Condition E.5 of this Module.
7. Corrective Measures Study Final Report
  - a. Within forty-five (45) calendar days after the completion of the CMS, the Permittee shall submit a CMS Final Report (Task IV of Appendix B of this Permit). The CMS Final Report shall:
    - i. Summarize the results of the investigations and, if applicable, of any bench-scale or pilot tests conducted;
    - ii. Provide a detailed description of the corrective measures evaluated and include an evaluation of how each corrective measure alternative meet the standards set forth in Condition E.8.a of this Module;
    - iii. Present all information gathered under the approved CMS Plan; and
    - iv. Contain any additional information to support the Regional Administrator in the corrective measure selection decision-making process, described under Condition E.8 of this Module.
  - b. The CMS Final Report (Task IV of Appendix B of this Permit) must address, at a minimum, all items necessary to demonstrate completion of Task II and III required by the CMS Scope of Work included in Appendix B of this Permit.
  - c. Following submission of the CMS Report set forth in Module Condition E.7.a, subsequent activities for the Report shall proceed in accordance with the following schedule:
    - i. Meeting between the Permittee, the Agency, and the Department to discuss the Report comments, as appropriate.



- ii. Submission of a revised Report to the Regional Administrator within thirty (30) days of the above-described meeting. (If the Regional Administrator determines that the above referenced meeting is not necessary, the Permittee shall submit a revised Report to the Regional Administrator, according to a schedule specified by the Agency, not to exceed forty-five (45) calendar days after Permittee's receipt of Report comments from the Regional Administrator.)
- d. As specified under Condition E.5.a of this Module, based on preliminary results and the CMS Final Report, the Regional Administrator may require the Permittee to evaluate additional corrective measures or particular elements of one or more proposed corrective measures.

## 8. Corrective Measures Selection

- a. Based on the results of the documents submitted under Condition E.3 of this Module for the RFI, under Condition E.7 of this Module for the CMS, and any further evaluations of additional corrective measures under this study, the Regional Administrator shall select a corrective measures that, at a minimum, will meet the following standards:
  - i. Be protective of human health and the environment;
  - ii. Attain media cleanup standards selected by the Regional Administrator during the corrective measures selection process;
  - iii. Control the source(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases of hazardous waste, including hazardous constituents, that might pose a threat to human health and the environment; and
  - iv. Meet all applicable waste management requirements.
- b. In selecting the corrective measure(s) which meets the standards for remedies established under Module Condition E.8.a, the Regional Administrator shall consider the following evaluation factors, as appropriate:

- i. Long-term reliability and effectiveness. Any potential corrective measure(s) may be assessed for the long-term reliability and effectiveness it affords, along with the degree of certainty that the corrective measure(s) will prove successful. Factors that shall be considered in this evaluation include:
  - (1) Magnitude of residual risks in terms of amounts and concentrations of hazardous waste, including hazardous constituents, remaining following implementation of a corrective measure(s), considering the persistence, toxicity, mobility and potential to bioaccumulate of such hazardous wastes, including hazardous constituents;
  - (2) The type and degree of long-term management required, including monitoring and operation and maintenance;
  - (3) Potential for exposure of humans and environmental receptors to remaining hazardous wastes, including hazardous constituents, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal or containment;
  - (4) Long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated hazardous wastes, including hazardous constituents, and their residuals; and
  - (5) Potential need for replacement of the corrective measure(s).
- ii. Reduction of toxicity, mobility, or volume. A potential remedy(s) may be assessed as to the degree to which it employs treatment that reduces toxicity, mobility or volume of hazardous wastes, including hazardous constituents. Factors that shall be considered in such assessments include:

- (1) The treatment processes the corrective measure(s) employs and materials it would treat;
  - (2) The amount of hazardous wastes, including hazardous constituents, that would be destroyed or treated;
  - (3) The degree to which the treatment is irreversible;
  - (4) The residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such hazardous wastes, including hazardous constituents; and
  - (5) All concentration levels of hazardous waste, including hazardous constituents, in each medium that corrective measure(s) must achieve to be protective of human health and the environment.
- iii. The short-term effectiveness of a potential corrective measure(s) may be assessed considering the following:
- (1) Magnitude of reduction of existing risks;
  - (2) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a corrective measure(s), including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment; and
  - (3) Time until full protection is achieved.
- iv. Implementability. The ease or difficulty of implementing a potential corrective measure(s) may be assessed by considering the following types of factors:
- (1) Degree of difficulty associated with constructing the technology;
  - (2) Expected operational reliability of the technologies;

- (3) Need to coordinate with and obtain necessary approvals and permits from other agencies;
  - (4) Availability of necessary equipment and specialists;
  - (5) Available capacity and location of needed treatment, storage, disposal services; and
  - (6) Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the corrective measure(s).
- v. Cost. The types of costs that may be assessed, including the following:
- (1) Capital costs;
  - (2) Operational and maintenance costs;
  - (3) Net present value of capital and operation and maintenance costs; and
  - (4) Potential future corrective action costs.

9. Permit Modification for Corrective Measure(s)

- a. Based on the information the Permittee submits in the RFI Final and Summary Reports, under Condition E.3 of this Module; the CMS Final Report, under Condition E.7 of this Module; and other information: the Regional Administrator will select a corrective measure(s) and initiate a permit modification to this Permit, pursuant to 40 C.F.R. § 270.41. The modification will specify the selected corrective measure(s) and include, at a minimum, the following:
  - i. Description of all technical features of the corrective measure(s) that are necessary for achieving the standards for corrective measure(s) established under Condition E.8.a of this Module, including length of time for which compliance must be demonstrated at specified points of compliance;

- ii. All media cleanup standards for hazardous constituents, selected by the Regional Administrator, that the corrective measure(s) must achieve to be protective of human health and the environment;
  - iii. All requirements for achieving compliance with these cleanup standards;
  - iv. All requirements for complying with the standards for management of wastes;
  - v. Requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the corrective measure(s);
  - vi. A schedule for initiating and completing all major technical features and milestones of the corrective measure(s); and
  - vii. Requirements for submission of reports and other information.
- b. Within thirty (30) calendar days after this Permit has been modified, the Permittee shall demonstrate in writing to the Regional Administrator that financial assurance for completing the approved corrective measure(s).

10. Modification of the Compliance Schedule

- a. Upon prior request of the Permittee, the Regional Administrator may extend a compliance deadline set forth in this Appendix by a period not to exceed ninety (90) days. Subsequent compliance deadlines that are determined by a deadline for which an extension under Condition III.E.10.a has been granted, shall automatically be adjusted accordingly. The cumulative effect of more than one extension granted under Condition III.E.10.a shall not exceed one hundred and eighty (180) days.
- b. If at any time the Permittee determines that the Compliance Schedule provided for in Appendix C of this Permit (as modified pursuant to Condition III.E.10.a), cannot be met, the Permittee must:
  - i. Notify the Regional Administrator in writing within fifteen (15) calendar days of such determination; and

- ii. Provide an explanation why the Compliance Schedule cannot be met.
- c. If the Permittee submits a notification and explanation pursuant to Condition III.E.10.b, above, or if at any time the Regional Administrator determines that the Compliance Schedule provided for in Appendix C of this Permit (as modified by Condition III.E.10.a) cannot be met, the Regional Administrator shall notify the Permittee and all persons on the facility mailing list in writing of the modifications to the Compliance Schedule deemed necessary by the Regional Administrator. Such notice will:
  - i. Describe the exact change(s) to be made to the permit conditions;
  - ii. Provide an explanation of why the modification is needed;
  - iii. Provide notification that supporting documentation or data may be available for inspection at the Regional office; and
  - iv. Specify the data on which the modification will become effective.
- d. Any modification to the Compliance Schedule provided for in Appendix C of this Permit (as modified by Condition III.E.10.a), initiated pursuant to this Condition III.E.10.b shall become effective no less than fifteen (15) days after the notification required pursuant to Condition III.E.10.c has been provided.
- e. Modification to the Compliance Schedule provided for in Appendix C of this Permit pursuant to this Condition III.E.10 does not constitute a reissuance of this Permit.

## 11. Corrective Action Through Post-Closure.

- a. On the basis of the approved Closure Plans the Glaze Basin and the Slip Basin were physically closed. During closure the waste in the Glaze Basin was removed and sent off-site for disposal, but the soil contaminated with metals around the Glaze Basin remains left on-site. During the closure of the Slip Basin, the bottom of the unit was raised above the groundwater table and was covered with a geomembrane liner. The waste in

the Slip Basin was consolidated into this upgraded unit and was then capped. A RCRA interim status groundwater monitoring program indicated that low levels of hazardous constituents have been detected in the groundwater downgradient of the closed units. The Post-Closure Care Conditions of the New Jersey Pollution Discharge Elimination System (NJPDDES)/ Discharge to Groundwater (DGW) Permit addresses the post-closure care requirements for the Glaze Basin. The Post-Closure permit to be issued by NJDEPE jointly with this HSWA permit, will address the post-closure care requirements for the Slip Basin, including the post-closure groundwater compliance monitoring program. In addition, the Post-Closure permit will require RFI and CMS for the SWMUs identified in Condition A.3.c of this Module and remedial action, if determined necessary. The Permittee shall submit to the Regional Administrator groundwater monitoring data required by the Post-Closure permits of NJDEPE.

MODULE IV - WASTE MINIMIZATION

- A. SUBMITTAL REQUIREMENTS. Pursuant to 40 C.F.R. § 264.73(b)(9), and Section 3005(h) of the Act, 42 U.S.C. § 6925(h), the Permittee must submit to the Regional Administrator, at least annually, a waste minimization report by the owner or operator. This report and all accompanying documentation will be submitted by July 1 of each year after the effective date of this Permit.
- B. WASTE MINIMIZATION REPORT. The Permittee must certify that:
1. A program is in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and
  2. The proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.
- C. HAZARDOUS WASTE REDUCTION PLAN (HWRP). The Permittee shall submit a HWRP by July 1 of the first year following permit issuance. The HWRP shall be updated at least biennially to reflect changes in the HWRP, and submitted by July 1 of that year. The HWRP shall include at a minimum, the following information:
1. Identify amounts and types of all acute hazardous waste generated by waste stream.
  2. Identify amounts and types of non-acute hazardous waste by waste stream for streams greater than five (5) tons and,
  3. Identify at least 90% of all non-acute hazardous waste generated at the facility.
  4. Describe source of generation and waste management method for each waste stream.
  5. Provide list of technically feasible and economically practicable waste reduction measures.
  6. Provide a program plan and schedule for implementing technically feasible and economically practicable waste reduction over time.



The following guidance documents should be used in developing the HWRP:

Waste Minimization Opportunity Assessment Manual, EPA/625/7-88/003, July 1988. Available through: EPA, Office of Research and Development, Cincinnati, Ohio 45268, tel. 513/569-7562 or NTIS, 5285 Port Royal Road, Springfield, VA 22161, tel. 703/487-4600.

Region II HWRP Requirements. Available through EPA Region II, Hazardous Waste Facilities Branch, Andrew Bellina, tel. 212/264-0505.

New York State Waste Reduction Guidance Manual March 1989.

New York State Waste Reduction Guidance Manual Supplement, December 1990. Available through the New York State Department of Environmental Conservation, Bureau of Pollution Prevention, 50 Wolf Road, Albany, New York 12233-7253, tel. 518/485-8400.

- D. IMPLEMENTATION OF WASTE REDUCTION TECHNIQUES.  
The Permittee shall implement the feasible waste reduction techniques in accordance with the schedule in the HWRP.

## MODULE V - LAND DISPOSAL RESTRICTIONS

- A. BACKGROUND. HSWA prohibits the continued land disposal of untreated hazardous wastes beyond specified dates, "unless the Administrator determines that the prohibition ... is not required in order to protect human health and the environment for as long as the wastes remain hazardous..." (Sections 3004(d)(1), (e)(1), (g)(5) of the Act, 42 U.S.C. § 6924(d)(1), (e)(1), (g)(5)).

Pursuant to 40 C.F.R. § 264.13(a)(1), before an owner or operator treats, stores, or disposes of any hazardous waste, he must obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the information which must be known to treat, store or dispose of the waste in accordance with the requirements of 40 C.F.R. Parts 264 and 268 or with the conditions of a permit issued under 40 C.F.R. Parts 270 and 124.

The Permittee shall comply with the waste analysis, notification, certification, and recordkeeping requirements of 40 C.F.R. § 268.7 whenever generating, treating, or managing a restricted waste.

- B. STORAGE OF RESTRICTED WASTES. The Permittee may store such wastes to which the land disposal prohibition applies for up to one year unless the Agency can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. 40 C.F.R. § 267.50(b).

The Permittee may store wastes to which the land disposal prohibition applies beyond one year; however, the Permittee bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. 40 C.F.R. § 268.50(c).

- C. LAND DISPOSAL OF RESTRICTED WASTES. The land disposal of restricted waste is prohibited unless the applicable treatment standard is met, or the waste is exempt under 40 C.F.R. § 268.1(c).

- D. RESTRICTION DATES. The above restrictions become effective and are phased in for specific hazardous wastes over a period which began November 8, 1986.

**DRAFT**

The Permittee is required to comply with the restrictions and applicable dates which are specified in 40 C.F.R. Part 268 for all hazardous waste regulated under this Permit.

## MODULE VI - ORGANIC AIR EMISSION STANDARDS FOR PROCESS VENTS AND EQUIPMENT LEAKS

- A. BACKGROUND. Under the authority of Section 3004(n) of the Act, 42 U.S.C. § 6924(n), on June 21, 1990, EPA promulgated standards for the monitoring and control of organic air emissions from hazardous waste treatment, storage and disposal facilities requiring a permit under Subtitle C of RCRA. These standards became effective on December 21, 1990.
- B. COMPLIANCE SCHEDULE. The Permittee shall comply with 40 C.F.R. Part 264 Subpart AA - Air Emission Standards for Process Vents - and Part 264 Subpart BB - Air Emission Standards for Equipment Leaks, as applicable. The Permittee will be required to submit supporting documentation to demonstrate compliance with these regulations.

## MODULE VII - TOXICITY CHARACTERISTICS

- A. BACKGROUND. Under the authority of Section 3001(g) and 3001(h) of the Solid Waste Disposal Act (the "Act"), as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. §§ 6920(g) and 6920(h), on March 29, 1990, EPA promulgated an improved leaching procedure to better predict leaching and an expansion of the Toxicity Characteristic (TC) listing to include additional toxicants for regulatory control under Subtitle C of the Act. These standards became effective September 25, 1990. (See 55 Federal Register 11788 (March 29, 1990).)
- B. APPLICABILITY. The Permittee shall comply with 40 C.F.R. Part 261, as applicable.

**DRAFT**

**APPENDIX A**

**SCOPE OF WORK FOR A  
RCRA FACILITY INVESTIGATION**

Appendix A

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI)  
AT  
LENOX CHINA, A DIVISION OF LENOX, INCORPORATED  
POMONA, NEW JERSEY

I. PURPOSE

The purpose of this RCRA Facility Investigation is to determine the nature, rate, direction and extent of releases of hazardous waste, including hazardous constituents, from solid waste management units and other source areas at the facility including areas off-site impacted by the release(s) from the facility, and to gather all necessary data to support the Corrective Measures Study. The Permittee shall furnish all personnel, materials, and services necessary for, or incidental to, performing the RCRA remedial investigation.

II. SCOPE

The RCRA Facility Investigation consists of seven tasks:

Task I: Description of Current Conditions

- A. Facility Background
- B. Nature and Extent of Contamination
- C. Implementation of Interim Measures

Task II: Pre-Investigation Evaluation of Corrective Measure Technologies

Task III: RFI Management Plans

- A. Project Management Plan
- B. Data Collection Quality Assurance Plan
- C. Data Management Plan
- D. Health and Safety Plan
- E. Community Relations Plan

Task IV: Facility Investigation

- A. Environmental Setting
- B. Source Characterization
- C. Contamination Characterization
- D. Potential Receptor Identification

Task V: Investigation Analysis

- A. Data Analysis
- B. Protection Standards

Task VI: Laboratory and Bench-Scale Studies

Task VII: Reports

- A. Progress
- B. Draft and Final

**III. TASK I: DESCRIPTION OF CURRENT CONDITIONS**

The Permittee shall submit for EPA approval a report providing the background information pertinent to the facility, contamination and interim measures as set forth below. The data gathered during any previous investigations or inspections and other relevant data shall be included. The report must include, at a minimum, the following information:

**A. Facility Background**

The Permittee's report shall summarize the regional location, pertinent boundary features, general facility physiography, hydrogeology, and historical use of the facility for the treatment, storage or disposal of solid and hazardous waste. The Permittee's report shall include:

1. Map(s) depicting the following:
  - a. General geographic location;
  - b. Property lines, with the owners of all adjacent property clearly indicated;
  - c. Topography and surface drainage (with a contour interval of two (2) feet and a scale of 1 inch = 100 feet) depicting all waterways, wetlands, floodplains, water features, drainage patterns, and surface-water containment areas;
  - d. All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;
  - e. All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;
  - f. All known past solid or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980;



- g. All known past and present product and waste underground tanks or piping;
- h. Surrounding land uses (residential, commercial, agricultural, recreational); and
- i. The location of all production and groundwater monitoring wells. These wells shall be clearly labeled and ground and top of casing elevations and construction details included (these elevations and details may be included as an attachment).

All maps shall be consistent with the requirements set forth in 40 CFR 270.14 and be of sufficient detail and accuracy to locate and report all current and future work performed at the site;

- 2. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;
- 3. Approximate dates or periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and
- 4. A summary of past permits requested and/or received, any enforcement actions and their subsequent responses and a list of documents and studies prepared for the facility.

## B. Nature and Extent of Contamination

- 1. The Permittee's report shall summarize all possible source areas of contamination. This, at a minimum, should include all regulated units, solid waste management units, spill areas, and other suspected source areas of contamination. For each area, the Permittee shall identify the following:
  - a. Location of unit/area (which shall be depicted on a facility map);
  - b. Quantities of solid and hazardous wastes;

- c. Hazardous waste or constituents, to the extent known; and
  - d. Identification of areas where additional information is necessary.
2. The Permittee shall prepare an assessment and description of the existing degree and extent of contamination. This should include:
- a. Available monitoring data and qualitative information on locations and levels of contamination at the facility;
  - b. All potential migration pathways including information on geology, petrology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and
  - c. The potential impact(s) on human health and the environment, including demography, groundwater and surface-water use, and land use.

C. Implementation of Interim Measures

The Permittee's report shall document interim measures which were or are being undertaken at the facility. This shall include:

- 1. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility;
- 2. Design, construction, operation, and maintenance requirements;
- 3. Schedules for design, construction and monitoring; and
- 4. Schedule for progress reports.

IV. TASK II: PRE-INVESTIGATION EVALUATION OF CORRECTIVE MEASURE TECHNOLOGIES

The Permittee shall submit a report that identifies the potential corrective measure technologies that may be used on-site or off-site for the containment, treatment, remediation, and/or disposal of contamination. This report shall also identify any field data that needs to be

DRAFT

collected in the facility investigation to facilitate the evaluation and selection of the final corrective measure or measures (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of wastes, etc.).

V. TASK III: RFI MANAGEMENT PLANS

The Permittee shall submit RFI Management Plans. These Plans shall be followed during the implementation of RFI, and will be part of the RFI Workplan. During the RFI, these Management Plans may be necessary for revisions depending on the detail of information collected to accommodate the facility specific situation. The RFI Management Plans include the following:

A. Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, budget, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Data Collection Quality Assurance Plan

The Permittee shall prepare a plan to document all monitoring procedures: sampling, field measurements, and sample analysis performed during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented.

1. Data Collection Strategy

The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following:

- a. Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;
- b. Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;

- c. Description of the rationale used to assure that the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition or an environmental condition. Examples of factors which shall be considered and discussed include:
  - i. Environmental conditions at the time of sampling;
  - ii. Number of sampling points;
  - iii. Representativeness of selected media; and
  - iv. Representativeness of selected analytical parameters.
- d. Description of the measures to be taken to assure that the following data sets can be compared to each other:
  - i. RFI data generated by the Permittee over some time period;
  - ii. RFI data generated by an outside laboratory or consultant versus data generated by the Permittee;
  - iii. Data generated by separate consultants or laboratories; and
  - iv. Data generated by an outside consultant or laboratory over some time period.
- e. Details relating to the schedule and information to be provided in quality assurance reports. The reports should include but not be limited to:
  - i. Periodic assessment of measurement data accuracy, precision, and completeness;
  - ii. Results of performance audits;
  - iii. Results of system audits;
  - iv. Significant quality assurance problems and recommended solutions; and

- v. Resolutions of previously stated problems.

2. Sampling

The Sampling section of the Data Collection Quality Assurance Plan shall discuss:

- a. Selecting appropriate sampling locations, depths, etc.;
- b. Providing a statistically sufficient number of sampling sites;
- c. Measuring all necessary ancillary data;
- d. Determining conditions under which sampling should be conducted;
- e. Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, etc.);
- f. Determining which parameters are to be measured and where;
- g. Selecting the frequency of sampling and length of sampling period;
- h. Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;
- i. Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- j. Documenting field sampling operations and procedures, including:
  - i. Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);
  - ii. Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

- iii. Documentation of specific sample preservation method;
- iv. Calibration of field devices;
- v. Collection of replicate samples;
- vi. Submission of field-biased blanks, where appropriate;
- vii. Potential interferences present at the facility;
- viii. Construction materials and techniques, associated with monitoring wells and piezometers;
- ix. Field equipment listing and sample containers;
- x. Sampling order; and
- xi. Decontamination procedures.
- k. Selecting appropriate sample containers;
- l. Sample preservation; and
- m. Chain-of-custody, including:
  - i. Standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment; and
  - ii. Pre-prepared sample labels containing all information necessary for effective sample tracking.

### 3. Field Measurements

The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:

- a. Selecting appropriate field measurement locations, depths, etc.;
- b. Providing a statistically sufficient number of field measurements;
- c. Measuring all necessary ancillary data;

- d. Determining conditions under which field measurements should be conducted;
- e. Determining which media are to be addressed by appropriate field measurements (e.g., groundwater, air, soil, sediment, etc.);
- f. Determining which parameters are to be measured and where;
- g. Selecting the frequency of field measurement and length of field measurements period; and
- h. Documenting field measurement operations and procedures, including:
  - i. Procedures and forms for recording raw data and the exact location, time, and facility-specific considerations associated with the data acquisition;
  - ii. Calibration of field devices;
  - iii. Collection of replicate measurements;
  - iv. Submission of field-biased blanks, where appropriate;
  - v. Potential interferences present at the facility;
  - vi. Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;
  - vii. Field equipment listing;
  - viii. Order in which field measurements were made; and
  - ix. Decontamination procedures.

#### 4. Sample Analysis

The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

- a. Chain-of-custody procedures, including:
  - i. Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
  - ii. Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
  - iii. Specification of laboratory sample custody procedures for sample handling, storage, and dispersement for analysis.
- b. Sample storage procedures and storage times;
- c. Sample preparation methods;
- d. Analytical procedures, including:
  - i. Scope and application of the procedure;
  - ii. Sample matrix;
  - iii. Potential interferences;
  - iv. Precision and accuracy of the methodology; and
  - v. Method detection limits.
- e. Calibration procedures and frequency;
- f. Data reduction, validation and reporting;
- g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
  - i. Method blank(s);
  - ii. Laboratory control sample(s);
  - iii. Calibration check sample(s);
  - iv. Replicate sample(s);



- v. Matrix-spiked sample(s);
- vi. "Blind" quality control sample(s);
- vii. Control charts;
- viii. Surrogate samples;
- ix. Zero and span gases; and
- x. Reagent quality control checks.
- h. Preventive maintenance procedures and schedules;
- i. Corrective action (for laboratory problems); and
- j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

- a. Unique sample or field measurement code;
- b. Sampling or field measurement location and sample or measurement type;
- c. Sampling or field measurement raw data;
- d. Laboratory analysis ID number;
- e. Property or component measured; and
- f. Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

- a. Unsorted (raw) data;
- b. Results for each medium, or for each constituent monitored;
- c. Data reduction for statistical analysis;
- d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
- e. Summary data.

### 3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transacts, three dimensional graphs, etc.):

- a. Display sampling location and sampling grid;
- b. Indicate boundaries of sampling area, and areas where more data are required;
- c. Display levels of contamination at each sampling location;
- d. Display geographical extent of contamination;
- e. Display contamination levels, averages, and maxima;
- f. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and
- g. Indicate features affecting intramedia transport and show potential receptors.

### D. Health and Safety Plan

The Permittee shall prepare a facility Health and Safety Plan.

- 1. Major elements of the Health and Safety Plan shall include:
  - a. Facility description including availability of resources such as roads, water supply, electricity and telephone service;

- b. Describe the known hazards and evaluate the risks associated with the incident and with each activity conducted;
  - c. List key personnel and alternates responsible for site safety, response operations, and for protection of public health;
  - d. Delineate work areas;
  - e. Describe levels of protection to be worn by personnel in work areas;
  - f. Establish procedures to control site access;
  - g. Describe decontamination procedures for personnel and equipment;
  - h. Establish site emergency procedures;
  - i. Address emergency medical care for injuries and toxicological problems;
  - j. Describe requirements for an environmental surveillance program;
  - k. Specify any routine and special training required for responders; and
  - l. Establish procedures for protecting workers from weather-related problems.
2. The Facility Health and Safety Plan shall be consistent with:
- a. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);
  - b. EPA Order 1440.1 - Respiratory Protection;
  - c. EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;
  - d. Facility Contingency Plan;
  - e. EPA Standard Operating Safety Guide (1984);
  - f. OSHA regulations particularly in 29 CFR 1910 and 1926;

- g. State, local, and other federal agency (e.g., DOD, DOE) regulations; and
- h. Other EPA guidance as provided.

E. Community Relations Plan

The Permittee shall prepare a plan, for the dissemination of information to the public regarding investigation activities and results.

VI. TASK IV: FACILITY INVESTIGATION

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of contamination (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical quality to support the development and evaluation of the corrective measure alternative or alternatives during the Corrective Measures Study ("CMS").

The site investigation activities shall follow the plans set forth in Task III. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and verify existing information on the environmental setting at the facility. The Permittee shall characterize the following:

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

- a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the facility, including:

- i. Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
  - ii. Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
  - iii. Depositional history;
  - iv. Identification and characterization of areas and amounts of recharge and discharge;
  - v. Regional and facility specific groundwater flow patterns; and
  - vi. Characterize seasonal variations in the groundwater flow regime.
- b. An analysis of any topographic features that might influence the groundwater flow system. (Note: Stereographic analysis of aerial photographs may aid in this analysis).
- c. Based on field data, test, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:
- i. Hydraulic conductivity and porosity (total and effective);
  - ii. Lithology, grain size, sorting, degree of cementation;
  - iii. An interpretation of hydraulic interconnections between saturated zones; and
  - iv. The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).

- DRAFT
- d. Based on field studies and cores, structural geology, and hydrogeologic cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:
    - i. Sand and gravel deposits in unconsolidated deposits;
    - ii. Zones of fracturing or channeling in consolidated or unconsolidated deposits;
    - iii. Zones of higher permeability or low permeability that might direct and restrict the flow of contaminants;
    - iv. The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and
    - v. Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.
  - e. Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:
    - i. Water-level contour and/or potentiometric maps;
    - ii. Hydrologic cross sections showing vertical gradients;
    - iii. The flow system, including the vertical and horizontal components of flow; and
    - iv. Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.
  - f. A description of manmade influences that may affect the hydrogeology of the site, identifying:

- i. Active and inactive local water-supply and production wells with an approximate schedule of pumping; and
- ii. Manmade hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).

**2. Soils**

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall include but not be limited to, the following information:

- a. SCS soil classification;
- b. Surface soil distribution;
- c. Soil profile, including ASTM classification of soils;
- d. Transacts of soil stratigraphy;
- e. Hydraulic conductivity (saturated and unsaturated);
- f. Relative permeability;
- g. Bulk density;
- h. Porosity;
- i. Soil sorptive capacity;
- j. Cation exchange capacity (CEC);
- k. Soil organic content;
- l. Soil pH;
- m. Particle size distribution;
- n. Depth of water table;
- o. Moisture content;
- p. Effect of stratification on unsaturated flow;
- q. Infiltration

- r. Evapotranspiration;
- s. Storage capacity;
- t. Vertical flow rate; and
- u. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization shall include, but not be limited to, the following activities and information:

- a. Description of the temporal and permanent surface-water bodies including:
  - i. For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
  - ii. For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of impoundment;
  - iii. For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100 year event);
  - iv. Drainage patterns; and
  - v. Evapotranspiration.
- b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH<sub>3</sub>, NO<sub>3</sub><sup>-</sup>/NO<sub>2</sub><sup>-</sup>, PO<sub>4</sub><sup>-3</sup>), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.



- c. Description of sediment characteristics including:
  - i. Deposition area;
  - ii. Thickness profile; and
  - iii. Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

**B. Source Characterization**

The Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, collected or removed including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineered barriers). This shall include quantification of the following specific characteristics at each source area:

- 1. Unit/Disposal Area characteristics:
  - a. Location of unit/disposal area;
  - b. Type of unit/disposal area;
  - c. Design features;
  - d. Operating practices (past and present.);
  - e. Period of operation;
  - f. Age of unit/disposal area;
  - g. General physical conditions; and
  - h. Method used to close the unit/disposal area.
- 2. Waste Characteristics:
  - a. Type of waste placed in the unit;
    - i. Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing, or reducing agent);
    - ii. Quantity; and

- iii. Chemical composition.
- b. Physical and chemical characteristics;
  - i. Physical form (solid, liquid, gas);
  - ii. Physical description (e.g., powder, oily sludge);
  - iii. Temperature;
  - iv. pH;
  - v. General chemical class (e.g., acid, base, solvent);
  - vi. Molecular weight;
  - vii. Density;
  - viii. Boiling point;
  - ix. Viscosity;
  - x. Solubility in water;
  - xi. Cohesiveness of the waste;
  - xii. Vapor pressure.
  - xiii. Flash point
- c. Migration and dispersal characteristics of the waste;
  - i. Sorption;
  - ii. Biodegradability, bioconcentration, biotransformation;
  - iii. Photodegradation rates;
  - iv. Hydrolysis rates; and
  - v. Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Contamination Characterization

The Permittee shall collect analytical data on groundwater, soils, and/or surface water/sediment contamination in the vicinity of the facility. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data shall include time and location of sampling, media sampled, concentrations found, and conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Groundwater Contamination

The Permittee shall conduct a groundwater investigation to characterize any plumes of contamination at the facility. This investigation shall, at a minimum, provide the following information:

- a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;
- b. The horizontal and vertical direction of contamination movement;
- c. The velocity of contaminant movement;
- d. The horizontal and vertical concentration profiles of chemical contaminants;
- e. An evaluation of factors influencing the plume movement; and
- f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil above the water table in the vicinity of the contaminant release(s). The investigation shall include the following information:

- a. A description of the vertical and horizontal extent of contamination.
- b. A description of contaminant and soil chemical properties within the contaminant source area and plume. This includes contaminant solubility, specification, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, and other factors that might affect contaminant migration and transformation.
- c. Specific contaminant concentrations.
- d. The velocity and direction of contaminant movement.
- e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

### 3. Surface-Water and Sediment Contamination

The Permittee shall conduct a surface-water and sediment investigation to characterize potential contamination in surface-water bodies and sediments resulting from the contaminant release(s) by the facility. The investigation shall include, but not be limited to, the following information:

- a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility, and the extent of contamination in underlying sediments;
- b. The horizontal and vertical direction of contaminant movement;
- c. The contaminant velocity;
- d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;
- e. An extrapolation of future contaminant movement; and

- f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.;

The Permittee shall document the procedures used in making the above determinations.

**D. Potential Receptors**

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples may be needed. Data on observable effects in ecosystems may also be obtained. The following characteristics shall be identified:

1. Local uses and possible future uses of groundwater:
  - a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and
  - b. Location of groundwater users including wells and discharge areas.
2. Local uses and possible future uses of surface waters draining the facility:
  - a. Domestic and municipal (e.g., potable and lawn/gardening watering);
  - b. Recreational (e.g., swimming, fishing);
  - c. Agricultural;
  - d. Industrial; and
  - e. Environmental (e.g., fish and wildlife propagation).
3. Human use of or access to the facility and adjacent lands, including but not limited to:
  - a. Recreation;
  - b. Hunting;
  - c. Residential;

- d. Commercial;
  - e. Zoning; and
  - f. Relationship between population locations and prevailing wind direction.
- 4. A description of the biota in surface water bodies on, adjacent to, or affected by the facility.
  - 5. A description of the ecology overlying and adjacent to the facility.
  - 6. A demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.
  - 7. A description of any endangered or threatened species near the facility.

#### VII. TASK V: INVESTIGATION ANALYSIS

The Permittee shall prepare an analysis and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/ or the environment, and to support the Corrective Measures Study.

##### A. Data Analysis

The Permittee shall analyze all facility investigation data outlined in Task IV and prepare a report on the type and extent of contamination at the facility including sources and migration pathways. The report shall describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area.

##### B. Protection Standards

The Permittee shall identify all relevant and applicable standards for the protection of human health and the environment (e.g., National Ambient Air Quality Standards, federally-approved water quality standards, etc.).

#### VIII. TASK VI: LABORATORY AND BENCH-SCALE STUDIES

The Permittee shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Permittee shall analyze the technologies, based on literature review, vendor contracts, and past experience to determine the testing requirements.

The Permittee shall develop a testing plan identifying the types(s) and goal(s) of the study(s), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Permittee shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

## IX. TASK VII: REPORTS

### A. Progress

The Permittee shall provide the EPA with signed, quarterly progress reports as required by Condition B.8.a of Module III of this permit.

### B. Draft and Final

The Permittee shall prepare a RCRA Facility Investigation ("RFI") Report as required by Condition E.3 of Module III of this Permit. The RFI Report shall present all information gathered under the approved RFI Workplan.

**DRAFT**

**APPENDIX B  
SCOPE OF WORK FOR  
A CORRECTIVE MEASURE STUDY**

**12**

NEW YORK



Appendix B

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY  
AT  
LENOX CHINA, A DIVISION OF LENOX, INCORPORATED  
POMONA, NEW JERSEY

**I. PURPOSE**

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken. The Permittee will furnish the personnel, materials, and services necessary to prepare the corrective measure study, except as otherwise specified.

**II. SCOPE**

The Corrective Measure Study consists of four tasks:

Task I: Identification and Development of the Corrective Measure Alternative or Alternatives

- A. Description of Current Situation
- B. Establishment of Corrective Action Objectives
- C. Screening of Corrective Measures Technologies
- D. Identification of the Corrective Measure Alternative or Alternatives

Task II: Evaluation of the Corrective Measure Alternative or Alternatives

- A. Technical/Environmental/Human Health/Institutional
- B. Cost Estimate

Task III: Justification and Recommendation of the Corrective Measure or Measures

- A. Technical
- B. Environmental
- C. Human Health

Task IV: Reports

- A. Progress
- B. Final

DRAFT

III. TASK I: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified Preliminary Corrective Measure Technologies (Task II of Appendix A of this Permit), the Permittee shall identify, screen, and develop the alternative or alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The Permittee shall provide an update to information presented in Task I of the RFI to the Agency regarding previous response activities and any interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RCRA Facility Investigation ("RFI"). The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee, in conjunction with EPA, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable federal statutes. At a minimum, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR §264.100.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and reassess the technologies specified in Task II and identify additional technologies which are applicable at the facility. The Permittee shall screen the preliminary corrective measure technologies identified in Task II of the RFI and any supplemental technologies

to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations. Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternative or Alternatives

The Permittee shall develop the corrective measure alternative or alternatives based on the corrective action objectives and analysis of the Preliminary Corrective Measure Technologies, as presented in Task II of the RFI and as supplemented following the preparation of the RFI Final Report. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies, identified in Task II, as supplemented in the development of the alternative or alternatives.

IV. TASK II: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the Initial Screening in Task I of this appendix and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

- a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:
  - i. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and
  - ii. Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.
- b. The Permittee shall provide information on there liability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:
  - i. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring

little or straight forward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

- ii. Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.
- c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:
- i. Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and
  - ii. Time has two components that shall be addressed: (1) the time it takes to implement a corrective measure and (2) the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

- d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Among the factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short and long term potential exposure to any residual contamination and protects human health both during and after implementation the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

**B. Cost Estimate**

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital, operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

- a. Direct capital costs include:

- i. Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.
- ii. Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

- b. Indirect capital costs include:

- i. Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;
- ii. Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
- iii. Startup and shakedown costs: Costs incurred during corrective measure startup; and
- iv. Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:



- a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;
- b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;
- c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;
- d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;
- e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;
- f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;
- g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;
- h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and
- i. Other costs: Items that do not fit any of the above categories.

V. TASK III: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The EPA will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks II and III of this appendix. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;
2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;
3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and
4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

## C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

## VI. TASK IV:REPORTS

### A. Progress

The Permittee shall provide the EPA with signed, progress reports as required by Condition B.8.a of Module III of this Permit.

### B. Corrective Measures Study ("CMS") Final Report

The Permittee shall prepare a CMS Final Report as required by Condition E.7 of Module III of this Permit. The CMS Final Report shall include all information gathered under the approved CMS Workplan. The CMS Final Report shall at a minimum include:

1. A description of the facility;
  - a. Site topographic map & preliminary layouts.
2. A summary of the corrective measure or measures;
  - a. Description of the corrective measure or measures and rationale for selection;
  - b. Performance expectations;
  - c. Preliminary design criteria and rationale;
  - d. General operation and maintenance requirements; and
  - e. Long-term monitoring requirements.
3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;
  - a. Field studies (groundwater, surface-water, soil, air); and
  - b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;
  - a. Special technical problems;
  - b. Additional engineering data required;
  - c. Permits and regulatory requirements;
  - d. Access, easements, right-of-way;
  - e. Health and safety requirements; and
  - f. Community relations activities.
5. Cost Estimates and Schedules;
  - a. Capital cost estimate;
  - b. Operation and maintenance cost estimate; and
  - c. Project schedule (design, construction, operation).

DRAFT

APPENDIX C  
COMPLIANCE SCHEDULE

APPENDIX CCOMPLIANCE SCHEDULEAT

LENOX CHINA, A DIVISION OF LENOX, INCORPORATED  
POMONA, NEW JERSEY

I. Compliance Schedule For Interim Corrective Measures.

- A. Pursuant to Module III Condition B.6.a, Permittee shall submit for approval an interim corrective measures study within thirty (30) calendar days following the date of the notification by the Regional Administrator requiring implementation of interim corrective measures.
- B. Pursuant to Module III Condition B.6.b, Permittee shall submit for approval an interim corrective measures work plan within thirty (30) calendar days after notifying the Regional Administrator of the actual or potential threat to human health or the environment.

II. Compliance Schedule For Reporting.

- A. Pursuant to Module III Condition B.8.a, Permittee shall submit signed progress reports of all activities conducted in accordance with the provisions of this Permit Module, beginning no later than thirty (30) calendar days after the Permittee is first required to begin implementation of any such requirement.

III. Compliance Schedule for Notification

- A. Pursuant to Module III Condition B.10.a, Permittee within fifteen (15) calendar days; after discovering facility releases of hazardous constituents in groundwater exceeding action levels have migrated off-site, shall notify the Regional Administrative and off-site owners or residents on land overlying such contamination.

- B. Pursuant to Module III Condition B.10.b, Permittee within fifteen (15) calendar days; after discovering facility releases of hazardous constituents in air have or are migrated off-site, exceeding action levels, shall notify the Regional Administrator and off-site individuals subject to such long term exposure.

IV. Compliance Schedule For Assessment of Newly Identified SWMUs.

- A. Pursuant to Module III Condition C.1, Permittee shall notify the Regional Administrator, in writing, of any additional SWMU(s) within fifteen (15) calendar days after discovery.
- B. Pursuant to Module III Condition C.2, Permittee shall submit a SWMU Assessment Report within thirty (30) calendar days after notifying the Regional Administrator of any additional SWMU(s).
- C. Pursuant to Module III Condition C.3, Permittee shall submit for approval a SWMU Sampling and Analysis Plan within thirty (30) calendar days after submittal of the SWMU Assessment Report.
- D. Pursuant to Module III Condition C.4.b, Permittee shall submit for approval revisions of the SWMU Sampling and Analysis Plan within thirty (30) calendar days after meeting with the Agency to discuss Plan comments, or within forty-five (45) calendar days after Permittee's receipt of Plan comments when no meeting is scheduled.
- E. Pursuant to Module III Condition C.4.c, Permittee shall begin to implement the SWMU Sampling and Analysis Plan within thirty (30) calendar days following written approval of the Plan.
- F. Pursuant to Module III Condition C.5, Permittee shall submit a SWMU Sampling and Analysis Report within thirty (30) calendar days of receipt by the Permittee of validated analytical data generated under the approved SWMU Sampling and Analysis Plan.

V. Compliance Schedule and Notification Requirements For Newly-Discovered Releases At SWMUs.

- A. Pursuant to Module III Condition D, Permittee shall notify the Regional Administrator, in writing, of any newly-discovered releases at SWMUs, no later than fifteen (15) calendar days after such discovery.

VI. Compliance Schedule For RCRA Facility Investigation ("RFI") Work Plan.

- A. Pursuant to Module III Condition E.1.a, Permittee shall submit for approval a RFI Task I Report for the SWMU(s) identified in Module Condition A.3.c, within ninety (90) calendar days after the effective date of this Permit, if applicable, and within ninety (90) calendar days after written notification that an RFI is required pursuant to Conditions C.6 and/or D of Module III.
- B. Pursuant to Module III Condition E.1.b, Permittee shall submit for approval a RFI Task II Report for the SWMU(s) identified in Module Condition A.3.c, within ninety (90) calendar days after the effective date of this Permit, if applicable, and within ninety (90) calendar days after written notification that an RFI is required pursuant to Condition C.6 and/or D of Module III.
- C. Pursuant to Module III Condition E.1.c, Permittee shall submit for approval a RFI Work Plan for the SWMU(s) identified in Module Condition A.3.c within one-hundred and fifty (150) calendar days after the effective date of this Permit, if applicable, and within ninety (90) calendar days after written notification that an RFI is required pursuant to Condition C.6 and/or D of Module III.
- ~~1 -~~  
~~1 -~~ D. Pursuant to Module III Condition E.1.c.iv Permittee may request, within thirty (30) calendar days of the effective date of this Permit, EPA to review for approval the Permittee's determination that any items required by Task III through V of the Scope of Work in Appendix A have been submitted or completed.



- E. Pursuant to Module III Condition E.1.d.ii, Permittee shall submit for approval revisions to the RFI Work Plan within thirty (30) calendar days after meeting with the Agency to discuss Plan comments, or within forty-five (45) calendar days after Permittee's receipt of Plan comments when no meeting is scheduled.

VII. Compliance Schedule For RFI Work Plan Implementation.

- A. Pursuant to Module III Condition E.2, Permittee shall begin to implement the RFI Work Plan within thirty (30) calendar days following written approval of the Plan.

VIII. Compliance Schedule For RFI Final Report And Summary Report.

- A. Pursuant to Module III Condition E.3.a, Permittee shall submit for approval the RFI Final and Summary Reports within sixty (60) calendar days of receipt by the Permittee of validated analytical data generated under an approved work plan.
- B. Pursuant to Module III Condition E.3.b.ii, Permittee shall submit for approval revisions to the RFI-Final and Summary Reports within forty-five (45) calendar days after meeting with the Regional Administrator to discuss Report comments or within forty-five (45) calendar days after Permittee's receipt of Report comments when no meeting is scheduled.
- C. Pursuant to Module III Condition E.3.c, Permittee shall mail the approved Summary Report to all individuals on the facility mailing list within thirty (30) calendar days of receipt of Report approval.

IX. Compliance Schedule For Current Interim Corrective Measures.

- A. Pursuant to Module III Condition E.4.a, Permittee shall submit all documents including, but not limited to, investigation reports and raw data which are associated with the trichloroethylene-contaminated groundwater within thirty (30) calendar days of the effective date of this Permit.

- DRAFT
- B. Pursuant to Module III Condition E.4.b, Permittee shall submit within thirty (30) calendar days after the Regional Administrator's determination of a need of the interim corrective measures, documents establishing financial assurance for conducting interim corrective measures required by the Regional Administrator pursuant to Module III Condition E.4.a.

X. Compliance Schedule For Corrective Measures Study ("CMS")  
Scope of Work.

- A. Pursuant to Module III Condition E.5.c, Permittee shall submit a Task I Report and documents within sixty (60) calendar days after the written notification by the Regional Administrator for a CMS.
- B. Pursuant to Module III Condition E.5.d, Permittee shall submit for approval a CMS Plan within ninety (90) calendar days after the written notification by the Regional Administrator for a CMS.
- C. Pursuant to Module III Condition E.5.e.ii, Permittee shall submit for approval revisions to the CMS Plan within thirty (30) calendar days after meeting with the Agency to discuss Plan comments, or within forty-five (45) calendar days after Permittee's receipt of Plan comments when no meeting is scheduled.

XI. Compliance Schedule For CMS Implementation.

- A. Pursuant to Module III Condition E.6, Permittee shall begin to implement the CMS Plan within thirty (30) calendar days following written approval of the Plan.

XII. Compliance Schedule For CMS Final Report.

- - A. Pursuant to Module III Condition E.7.a, Permittee shall submit for approval a CMS Final Report within forty-five (45) days after completion of the CMS.

- B. Pursuant to Module III Condition E.7.c.ii, Permittee shall submit for approval revisions to the CMS Final Report within thirty (30) calendar days after meeting with the Agency to discuss Report comments, or within forty-five (45) calendar days after Permittee's receipt of report comments, when no meeting is scheduled.

XIII. Compliance Schedule For Financial Assurance.

- A. Pursuant to Module III Condition E.9.b, Permittee shall demonstrate financial assurance for completing the approved corrective measure(s) within thirty (30) calendar days after this Permit has been modified.

XIV. Modification of the Compliance Schedules.

- A. Pursuant to Module III Condition E.10.a.i, Permittee shall submit proposed modifications of any Compliance Schedule within fifteen (15) calendar days of determining that a schedule cannot be met.

**APPENDIX D**

**COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

DRAFT

APPENDIX D

COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO UNITED STATES ENVIRONMENTAL PROTECTION AGENCY\*  
AT  
LENOX CHINA, A DIVISION OF LENOX, INCORPORATED  
POMONA, NEW JERSEY

A Report Narrative should accompany each submission, summarizing the contents, data and QA/QC results and all relevant circumstances of the work.

A. Parameter requested.

B. Sample Number or Numbers, Matrix, and:

1. Date and time collected;
2. Date extracted and/or digested;
3. Date and time analyzed; and
4. Chain of custody report and/or form, including confirmation of unbroken chain of custody, intact sample packaging and container seals and adequate temperature and/or other preservation.

C. Results *b.e.f.*

1. Sample results;
2. Duplicate;
3. Blanks;<sup>a</sup>
4. Matrix spike; matrix spike duplicate; blank spike; and
5. Surrogate recoveries, if applicable.

D. Supporting QA/QC<sup>b</sup>

1. Methodology;
2. Method detection limits, instrument detection limits;
3. Linear curves;
4. Percent solids for soils, sludges, sediments, and where otherwise applicable;
5. Calculations<sup>c</sup>;
6. Cleanup procedures;
7. Data validation procedures, results, and completed data validation checklists; and
8. Documentation which illustrates how blank water is determined to be analyte-free.

In addition to submitting the above, all sample data and its QA/QC data as specified in SW-846, 3rd edition, Chapter 1, must be maintained accessible to USEPA either in hard copy or on magnetic tape or disk (computer data files). The data, if

DRAFT

APPENDIX D  
COMPONENTS REQUIRED FOR RCRA ANALYTICAL DATA SUBMITTED TO UNITED STATES ENVIRONMENTAL PROTECTION AGENCY\*  
AT  
LENOX CHINA, A DIVISION OF LENOX, INCORPORATED  
POMONA, NEW JERSEY

A Report Narrative should accompany each submission, summarizing the contents, data and QA/QC results and all relevant circumstances of the work.

A. Parameter requested.

B. Sample Number or Numbers, Matrix, and:

1. Date and time collected;
2. Date extracted and/or digested;
3. Date and time analyzed; and
4. Chain of custody report and/or form, including confirmation of unbroken chain of custody, intact sample packaging and container seals and adequate temperature and/or other preservation.

C. Results b.o.f.

1. Sample results;
2. Duplicate;
3. Blanks;<sup>a</sup>
4. Matrix spike; matrix spike duplicate; blank spike; and
5. Surrogate recoveries, if applicable.

Supporting QA/QC<sup>b</sup>

1. Methodology;
2. Method detection limits, instrument detection limits<sup>c</sup>
3. Linear curves;
4. Percent solids for soils, sludges, sediments, and where otherwise applicable;
5. Calculations<sup>d</sup>;
6. Cleanup procedures;
7. Data validation procedures, results, and completed data validation checklists; and
8. Documentation which illustrates how blank water is determined to be analyte-free.

tion to submitting the above, all sample data and its data as specified in SW-846, 3rd edition, Chapter 1, must be retained accessible to USEPA either in hard copy or on tape or disk (computer data files). The data, if

PE92-SEP 16 1992

Request for Signature for Final HSWA Permit: Lenox China, a  
Division of Lenox, Inc., Pomona, New Jersey,  
EPA I.D. No.: NJD002325074

Andrew Bellina, P.E.  
Chief, Hazardous Waste Facilities Branch (2AWM-HWF)

Conrad Simon, Director  
Air and Waste management Division (2AWM)

Attached, for your signature, is the Resource Conservation and Recovery Act (RCRA), Hazardous and Solid Waste Amendments (HSWA) final permit for Lenox China, a Division of Lenox, Inc. (Lenox), located on Tilton Road, Pomona, New Jersey.

The EPA HSWA permit is to be issued jointly with the State RCRA post-closure permit under the New Jersey Pollutant Discharge Elimination System (NJPDDES)/Discharge to Groundwater (DGW) program. The HSWA and the State post-closure permits together constitute the full RCRA post-closure permit for the facility.

The facility was permitted under RCRA interim status to operate two RCRA surface impoundments (Glaze Basin and Slip Basin) and one drum storage area. The two surface impoundments ceased operation in mid-1980's and the closure of the units were completed in 1988 and 1990. NJDEPE issued a permit in July 1990 to require post-closure groundwater monitoring for Glaze Basin. The post-closure permit to be jointly issued with the HSWA permit addresses the remaining post-closure care requirements including the post-closure care requirements for Slip Basin. The drum storage area was closed and decontaminated. It is currently being used for less than 90 days storage of hazardous wastes before they are sent off-site for disposal. Additional 10 units were discovered during RCRA facility assessment conducted by EPA and two more SWMUs were noted during the permit comment period due to the change made in Lenox's wastewater treatment plant. The HSWA permit will require Lenox to investigate 11 SWMUs of these units and to implement, if needed, remedial action and to continue their remediation program for contaminated groundwater.

#### BACKGROUND

The facility (Lenox China, a Division of Lenox, Incorporated) is located on fifty six (56) acres of land. The facility has been manufacturing since 1954 ceramic dinnerware and giftware. The dinnerware includes fine china and casual dinnerware, and the giftware includes vases, bowls, serving pieces, candy dishes, and special collections. Manufacturing processes consist of blending of earthen clay and alumino-silicates, molding and plastering, firing, coating and glazing with glass formed from lead compounds, and etching to add patterns and designs.

The coating and glazing process generates lead-containing wastewater. The principal lead-containing wastewater (glaze-containing wastewater) is segregated from the other remaining wastewaters when these wastewaters are generated from the plant processes. The lead-containing wastewater is dewatered through a filter press. Sludge from the filter press is temporarily stored in a storage bin and eventually sent off-site for further treatment and disposal. The liquid phase from the filter press is stored in two tanks for pH balance before it is sent to the Atlantic County Utilities Authority treatment system, a POTW. All other industrial wastewaters are directed to the main on-site industrial waste treatment plant for treatment. The treated wastewater is discharged to a surface water course through the point source permitted by the New Jersey Department of Environmental Protection and Energy (NJDEPE) under the New Jersey Pollution Discharge Elimination System (NJPDES)/Discharge to Surface Water (DSW). The sludge generated from the industrial waste treatment plant is dewatered and sent off-site for disposal. The industrial waste treatment plant has been upgraded twice. The oldest industrial waste treatment plant (1954-1970) consisted of the Glaze Basin, the Slip Basin, and the Tilton Road Pond. The next industrial waste treatment plant (1970-1987) consisted of the Slip Basin, Equalization Sump, the Clarifier, Vacuum Filter, the Polishing Lagoon, and the Tilton Road Pond. The present industrial waste treatment plant consists of the New Sump, the Surge Tank, the Clarifiers, Vacuum Filter, the Polishing Lagoon, and the Tilton Road Pond.

The etching process uses trichloroethylene as a degreaser and generates sludges containing trichloroethylene. The sludge is collected in a drum located in the degreaser sludge pit outside the production process building. Once the drum at the degreaser sludge pit is filled, the drum is removed by a forklift to the drum storage area. Drums containing the sludge are stored in the drum storage area and eventually are sent off-site for disposal.

The two RCRA surface impoundments were closed in 1988 (Glaze Basin) and in 1990 (Slip Basin). NJDEPE issued a permit in July 1990 to require post-closure groundwater monitoring for the Glaze Basin. The post-closure permit to be jointly issued with the HSWA permit addresses the remaining post-closure care requirements including the post-closure care requirements for the Slip Basin. The drum storage area was closed and decontaminated. It is currently being used for less than 90 days storage of hazardous wastes before they are sent off-site for disposal.



The groundwater underlying parts of the facility is contaminated with trichloroethylene. The investigations conducted by Lenox show that the groundwater contamination might have been caused by releases from the drum storage area and the degreaser sludge pit. The trichloroethylene remediation system, proposed by the facility and subsequently approved by NJDEPE, is currently in operation. The trichloroethylene remediation system consists of pumping of groundwater, treatment with air stripping, and reinjection of treated groundwater through an injection trench. After review of the remediation system, EPA has concurred with the NJDEPE's approval. The HSWA permit and the post-closure permit to be jointly issued by NJDEPE will require the Permittee to continue the remediation system for contaminated groundwater.

#### HSWA PERMIT

This HSWA permit requires the Permittee to:

1. Determine the nature, extent, direction, and rate of migration of hazardous waste, including hazardous constituents, in soils, groundwater, surface water/sediment, subsurface gas and/or air at any solid waste management unit(s) at the facility regardless of the time waste was placed in such unit, and to develop appropriate corrective action for any such releases;
2. Certify annually that the generation of hazardous waste is minimized to the extent practicable and submit and implement a hazardous waste reduction plan;
3. Comply with the land disposal restrictions;
4. Comply with the organic air emission standards for process vents and equipment leaks in accordance with the HSWA regulations promulgated on July 21, 1990;
5. Comply with the Toxicity Characteristic standards in accordance with the regulations promulgated on March 29, 1990; and
6. Comply with any other applicable statutory or regulatory requirements imposed pursuant to RCRA and HSWA.

#### PUBLIC COMMENT ON THE DRAFT HSWA PERMIT

The availability of the draft HSWA permit was public noticed on June 11, 1992 in the newspaper Atlantic City Press and radio announced on June 8, 1992. The comment period closed on July 27, 1992. EPA has received written comments on the draft HSWA permit only from Lenox, Inc. This Responsiveness Summary document provides EPA's response to the comments.

REVISIONS FROM THE DRAFT HSWA PERMIT

Most of the comments received from Lenox are relatively minor. We have revised the draft HSWA requirements to address these comments. One comment asked how EPA will coordinate with NJDEPE, since the State post-closure permit is also requiring corrective action similar to the HSWA permit. The Responsiveness Summary document, attached to this memorandum, addresses this issue.

EPA and the NJDEPE will coordinate to ensure that actions or investigations to be taken by Lenox address federal and state requirements. Lenox may submit identical documents to EPA and NJDEPE to satisfy the HSWA and post-closure permit requirements. Any plans or reports, to be submitted pursuant to the HSWA and the post-closure permits, will be jointly reviewed and approved by the EPA and the NJDEPE. Any technical conflicts will be resolved between the agencies before communication with Lenox.

One of the comments provided by Lenox, Inc., indicated that they have modified their wastewater treatment plant. During the review of the modified wastewater treatment plant, we have noted two new additional SWMUs. Since these SWMUs have containment systems and the relatively short period of operation (operated since April 1991), the HSWA permit will require no investigations for these SWMUs.

Attachments *w/o attachments*  
*01/08/99 - KON*

bcc: Andrew Bellina, 2AWM-HWF w/o attaches.  
Barry Tornick, 2AWM-HWF w/o attaches.  
Andrew Park, 2AWM-HWF w/o attaches. ✓

PE92- OCT 07 1992

Irene Kropp, Chief  
Bureau of Groundwater Pollution Abatement  
New Jersey Department of Environmental  
Protection and Energy  
401 East State Street - CN-029  
Trenton, New Jersey 08625

Re: Final HSWA Permit for Lenox China, a Division of Lenox,  
Inc., Pomona, New Jersey, EPA I.D. NJD002325074

Enclosed are the final Hazardous and Solid Waste Amendments (HSWA) of 1984 permit, the Responsiveness Summary, and the Notice of EPA's issuance of the permit for the Pomona, New Jersey Lenox China, a Division of Lenox, Inc. (Lenox) facility. Copies of these documents should be sent jointly with the RCRA post-closure permit being developed by your Bureau, to all parties on the list which is also enclosed in this letter.

Please put the effective date and the expiration date on pages i and ii of the HSWA permit and, in addition, put the date of the notice served in the Notice. As stated in the enclosed Notice, the 30 day period to request review of the final HSWA permit shall begin with the service of the Notice. The date of the Notice served will be the same as the date of the cover letter to be sent from your Bureau to the parties in the mailing list, which transmits copies of the HSWA permit, the Responsiveness Summary, and the Notice of final Permit decision. Three (3) days will be added to the 30 days, if the Notice is served by mail. Therefore, the effective date is 30 days, or 33 days if served by mail, from the date of the EPA cover letter. In addition, since the HSWA permit will be effective for five (5) years, the expiration date will be five (5) years from the effective date.

If you have any questions, please contact Andrew Park, of my staff, at (212) 264-8684.

Sincerely yours,

Andrew Bellina, P.E.  
Chief, Hazardous Waste Facilities Branch

Enclosures *w/o enclosures*  
*01/08/99 KOM*

cc: Bruce Venner, BFCM, NJDEPE, w/encl.

Dhruva Kanjarpane, P.E.,  
BFCM, NJDEPE, w/o encl.

bcc: Andrew Bellina, 2AWM-HWF w/o encl.  
Barry Tornick, 2AWM-HWF w/o encl.  
Andrew Park, 2AWM-HWF w/encl. ✓  
Laura Livingston, 2OPM-PA w/enclo.  
Coles Phinizy, 2ORC-AWTS w/enclo.